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Agriculture Improv'd:

OR, THE

PRACTICE

OF

HUSBANDRY

DISPLAY'D.

Chiefly ſhewn by FACTS,

Perform'd in all Sorts of Land, according to the Old *Plain*, and the New *Drill*, Way of FARMING.

In TWO VOLUMES: Containing,

A Receipt how to improve an Acre of Barley for Six-pence Charge.

How to improve that noble large Fowl the *Buſtard*.

The Nature of Pond-Inſects; Alſo of Serpents; and how to cure their venomous Bites, *&c.*

How to prevent the Miſchiefs done to Farmers by Sparrows.

Of St. *Timothy*'s Graſs, (five Feet long) which will mow four Times a Year.

Of NIGHT as well as DAY FISHING.

Tench-Broth, its Reſtorative Nature; and how to make it.

Mr. *Worlidge*'s Notes on Husbandry commented upon.

Of Improving of Eſtates, Soils, Bogs, *&c.*

Of the Management of BEES.

How to prevent Damage done to Peas by Pigeons, *&c.*

Accounts of ſeveral new-invented Engines and Implements, of great Uſe in Husbandry.

How Farming may be carried on by the Drill-Plough, without Dung, Manure, or live Cattle.

How to preſerve Wheat in Granaries, from Damps, Vermin, *&c.*

How to defend Crops of Turnep-ſeed from Field-Fowls.

Of Encouragements from Landlords to promote the Induſtry of Tenants.

The preſent State of bad Husbandry in SCOTLAND; with Propoſals for remedying it.

The *Cheſhire* and *Lancaſhire* Way of Managing their Wheat and Barley Crops.

Of the bad Conſequences of wrong Manuring, wrong Ploughing, *&c.*

Damage done by greedy Tenants to Themſelves and Landlords, by Ploughing up the poor Lands of Woulds, Downs, and Commons.

With many other Curious and Serviceable Matters, Never before Publiſhed.

VOL. I.

By WILLIAM ELLIS, a Farmer, of *Little Gaddeſden*, near *Hemſted*, in *Hertfordſhire*, Author of the MODERN HUSBANDMAN.

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AGRICULTURE Improved.

For the Month of May.

I SHALL begin this Treatiſe with reciting Mr. Worlidge's *Notes on the Month of* May, *who was certainly a moſt ingenious, learned Gentleman, which enabled him to touch on many Branches of Huſbandry; but, for want of being acquainted with the practical Part, was forced to write very, very little on them: And therefore I ſhall here attempt ſome of their ſeveral Explanations, according to the preſent Practice of Huſbandry.—See his Book, intituled,* A Complete Body of Husbandry and Gardening: Or, The Gentleman's Companion in the Buſineſs and Pleaſures of a Country Life. *Printed in the Year* 1716. *Price Six Shillings.*

CHAP. I.

MR. Worlidge's *Huſbandry-notes on the Month of* May.——This Month uſhers in the moſt welcome Seaſon of the Year. Now gentle *Zephyrus* fans the ſweet Buds; and the celeſtial Drops water fair *Flora*'s Garden.—The Countryman's Heart is revived (if this Month

prove ſeaſonable) with the Hopes of an happy Autumn; if it prove cold, it is an Omen of Good for Health, and promiſes fair for a full Barn: The Pleaſure of Angling is now in its Splendor, eſpecially for Trout and Salmon.—

Now wean thoſe Lambs you intend to have the Milk of their Ewes; forbear cutting or cropping Trees you intend ſhall thrive, till *October*; kill Ivy.

If your corn be too rank, you may now mow it, or feed Sheep with it, before it be too forward; weed Corn; in ſome Places Barley may be ſown in this Month.

Now ſow Buck-wheat, or Branck; ſow Latter-peaſe: Alſo Hemp and Flax may yet be ſown.

Weed Quickſets; drain Fens and wet Grounds; trifallow your Land; carry out Soil and Compoſt; gather Stones from the Fallows; turn out the Calves to Graſs; overcharge not your Paſtures, leſt the Summer prove dry; get home your Fuel; begin to burn-beat your Land; ſtub or root out Goſs, Furze, Broom, or Fern; and grub up ſuch Coppices, or other ſhrubby woody Places, you intend ſhould not grow again.

Sell off your Winter Cattle.

About the End of this Month mow Clover-graſs, St. Foin, and other *French* graſſes. Now leave off watering your Meadows, leſt you gravel or rot your Graſs.

Look now after your Sheep, if this Month prove rainy, leſt the Rot ſurpriſe them.

Plant all Sorts of Winter Greens.

Sow the more tender Garden-ſeeds; as ſweet Marjoram, Bawm, Thyme, and hot aromatic Herbs and Plants; ſet Sage and Roſemary.

Cover no longer your Cucumbers, Melons, *&c.* excepting with Glaſſes; ſow Purſlain, Lettuce, *&c.*

About

About the End of this Month take up ſuch Tulips which are dried in the Stalk.

Bind Hops to their Poles, and make up the Hills after Rain.

Watch the Bees now ready to ſwarm.

CHAP. II.

HOW neceſſary it is for Farmers to obſerve Plowing, Sowing, Feeding, Mowing, Reaping, and performing a thouſand other Things in the Art of Husbandry in due time. —— Experience has often proved how important it is for Farmers to obſerve Plowing, Sowing, Feeding of Cattle, Mowing, Reaping, and doing a thouſand other Things in the Art of Husbandry at a right time; by the fatal Effects that have enſued the Neglect thereof. For there is certainly a critical Time for moſt Things; and more particularly for performing thoſe Actions that depend on the various Seaſons of the Year, of which the Countryman is, more than any other, concerned in the due Obſervation. Time, ſays one, is a thing ſo precious, and Occaſion ſo precipitous; and, where many Things are to be done, Time let-paſs prevents the Succeſs of our Endeavours, and then Loſs and Confuſion ſucceeds; hence we ſay, the bad Husbandman has but one Chance in ſeven Years to get full Crops (according to the general Notion of the Country): And then he chiefly enjoys them by the mere Affluence of the Weather; that is, when a mild Winter, and a hot Summer, are attended with frequent Showers of Rain; for ſuch Seaſons commonly cauſe the induſtrious Farmers Crops to grow too rank, and conſequently ſpoil; when the poor Land of a

negligent Farmer produces Crops in a juſt Growth, to his greater Profit. And Mr. *Worlidge* well obſerves, that it is a very great Neglect in Agriculture, to be too late: It brings a conſiderable Damage; like a backward Year, that produces a bad Crop, ſo doth a backward Husbandman meet with ſmall Gains. You very rarely find a thriveing Husbandman behind with his Affairs, or a declining Husbandman ſo forward as his Neighbour. In *Hertfordſhire* we call the latter Sort *Afternoon Farmers*: It is the early Bird that catcheth the Worm; accordingly a diligent Farmer thinks an Hour's Time in a Morning, for doing of Buſineſs, is worth two in an Afternoon; and therefore in this Month, and throughout all the Summer, he, by ringing a Bell or Call, alarms his Plowman, and the Plowman his Horſekeeper, who lies with him, and makes him turn out of Bed every Morning at Four of the Clock, to bait his Plow-horſes, for two Hours. At Five the Plowman riſes, to help harneſs the Horſes; and then while they are feeding, both go to Breakfaſt; and at the ſame Hour of Five the Maſter is up, to ſee theſe and other things performed in due Order, and his Team ſet out to plow at Six a Clock; for, according to the common and true Saying, *The Eye of the Maſter makes the Horſe fat*: And obſerve, that they continue Eight Hours Work in the Field, before they ſhut out; ſo that it is about Two a Clock, before they return to the Stable; when (as I have often known it done) a ſlothful Farmer ſuffers his Team to ſet out of his Yard by Seven a Clock, and out of the Field by One; which occaſions him to do that Work in Six Days, which he might conveniently do in Five. Hence it is, that a backward Farmer loſeth fine Sowing-days, and thereby, perhaps, a right Seaſon for all that Year, to his great Prejudice;

or,

or, by his Neglect, his Hay or Corn is out in the Field, when it ſhould have been in the Barn, and thus becomes ſpoiled by Rain. It was the Advice of a Friend, to one that took a Farm, where others had broke before, That he roſe, at Five a Clock every Summer Morning, to water a particular Tree, and then he would engage he would not break. The Meaning of which is, That, if he was out in his Fields by that time, he would diſcover and prevent thoſe who uſed to turn their Cattle into the ſame Ground, while the former ſluggiſh Tenants were aſleep, and eat up their Graſs and Corn. I knew an old Knave practiſe this Sort of Rapine many Years, and in ſeveral Farms that he lived in, by being up earlier and later than his Neighbours; which gave him an Opportunity to make a ſmall Gap in a Hedge, or, by lifting a Gate off its Hinges, tho' locked, make a Way for his Sheep or Horſes to get their Belly full at his Brother-farmer's Coſt; and if they happened to be taken in the Treſpaſs, as he was then out of Sight, he would plead accidental Damage. But if this Excuſe did not avail, and Pounding ſucceeded, his next Study was, how to retrieve this Loſs, which he generally did in the following Manner; *viz.* When he thought others were ſafe in their Beds, he would go and open a Place for inviting his Neighbour's Cattle into his Ground, and then likewiſe pound them; a Skit that ſeldom failed of reimburſing him of what he was out of Pocket this way; and it was for this ſharp Sort of Proceeding that he was called *Cut*, to his dying Day. Others there are, who keep a Horſe or Horſes for Higgling, or for carrying of Timber, or keep Aſſes or Mules for carrying earthen or other Ware about the Country; ſome of theſe are the Farmers great Enemy, but moſt of all to the ſlothful Sort, becauſe theſe Night-

En-

Encroachers wait a late Hour for turning their Beaſts into a Field to fill their Bellies, with a Bag at their Tail to catch their Dung, and prevent Suſpicion; for they little fear Surprize, as truſting to their vigilant Watching to take them out before the Farmer or his Men are up. But there is rather a worſe Miſtake to come yet, and that is, by a lazy or ignorant Farmer's wrong timing the Sowing of his Seed, as it often happens; for if, as I have remarked in my former Works, a Farmer was to ſow an Horn Grey-pea ſo late as in *April*, or a Blue-pea in *January*, both Crops would be conſequently loſt. Or if a Red Lammas-wheat was to be ſown in *February*, or if Barley-ſeed was ſown then in a wet Soil, it might be expected they would ſhare the ſame Fate; and the ſame in an Hundred other Inſtances, which I think I could name: However, what Mr. *Worlidge* obſerves is very juſt, when he ſays, "As for the Times and "Seaſons of the Year, from the Beginning to "the End thereof, every Day ſomething is to be "done by the Husbandman, as was ſaid of a Gar-"dener, That his Work is never at an End, it "begins with the Year, and continues to the "next: yet it is not every Year alike, neither is "every Place alike; ſome Years, or, at leaſt, "ſome Seaſons of the Year, prove more forward "by Two or Three Weeks, or more, at one "time than at another: Alſo the Situation of "Places, either better defended from, or more "obvious to the Intemperature of the Air, be-"gets ſome Alterations." In theſe, and ſuch-like Caſes, the ſubſequent Rules of my ſeveral Monthly Supplements are to be ſeaſonably applied by the judicious Husbandman, according as the Seaſon happens to be earlier or later, or the Nature of the Soil, and its Situation require; and which, as they are written for the Practice of *Bri-*

tain, are very different from many of thoſe Rules laid down by antient foreign Authors, who wrote their Books in *Italy*, *France*, and other hotter Countries, where their Degrees of Heat, and earlier Seaſons, very much vary from thoſe of ours; and therefore a Grain, a Graſs-ſeed, or a Tree, *&c.* proper to the Climate, Seaſon of the Year, and Soil, ſhould be with nice Judgment ſown and planted: For if, no farther off than in ſome Parts of *Darby*, *Stafford*, *Shropſhire*, and other Northern Counties, they are obliged to ſow Oats for Bread, becauſe the Poorneſs of the Ground, and the Severity of their cold Seaſons, will not ſuffer Wheat to proſper; or, if they do ſow Wheat, or Barley, or Peas, *&c.* the firſt muſt be ſown very early, and the latter later than is obſerved to be done in the more ſouthern Parts of *England*: How ſhould one Rule of Time, *&c.* ſerve for both Countries, without leading the Farmers of one or both of them into Miſtakes? On the Graſs Baulks of ſome of my plowed inclos'd Fields, I have ſome Standard *French*, and other excellent forward Pear-trees growing, that, in ſome kind Seaſons, with a little Aſſiſtance at their Roots, bear pretty well; when, if ſuch were planted in ſome Parts of the North, it would diſcover a great Imprudence in their Owner, becauſe, their tender Natures not being capable of reſiſting the Violence of their late cold Weather, it would render their expenſive Attempts fruitleſs. Wherefore, when Gentlemen ſend to me for different Sorts of Corn, Graſs-ſeeds, Fruit-trees, *&c.* I endeavour to know the Nature of their Soils, and their Situations; and accordingly give them the beſt Account I can, when, where, and how, to ſow theſe Seeds, and plant the Trees that are proper, and apply a Dreſſing to them, as is moſt agreeable to the Place for forcing on a full Growth

of

of their ſeveral Species with the greateſt Expedition and Profit.

CHAP. III.

IF the Month of *May* prove ſeaſonable, it revives the Countryman's Heart with the Hopes of an happy Autumn, and a full Barn.——As this Remark affords my Pen a very extenſive Opportunity to make Obſervations on ſeveral Field Vegetables that are to be received into Barns; I ſhall firſt begin with that of Wheat.

Of Wheat, and its Incidents, in the Month of May ——Theſe *Items* of Mr. *Worlidge* are certainly true, though mere and trifling, becauſe they are without uſeful Explanations; and therefore I am induced to inlarge on their Particulars, that they may become ſerviceable to my Readers. Hence, then, I am to obſerve, that the Month of *May* may be ſaid to be ſeaſonable, and revive the Farmer's Heart, when he ſees it attended with dry Weather; for then his Corn, his Graſs, and his Trees, are forced on in a regular fertile Growth, which gives the Wheat an Opportunity to begin opening its Sheath or Hoſe, and let out the green Ear of the more forward and largeſt Stalks; for we ſay, May *never goes out without a Wheat-ear*; and then, if the former Months have been as propitious as a dry *May* is, there will appear a moſt encouraging Sight, to ſee whole Fields of this King of Grain ſhew their innumerable long Heads, in their green Livery, full of plump, milky Kernels, as a Preſage of great Crops at Harveſt; for, by means of favourable Seaſons before, and now, thoſe prejudicial Extremes are very much avoided, which ſometimes damage

Wheat

Wheat in its tender infant Growth; but when inclement Seaſons have happened before, and a wet cold *May* follows; or if former Months have been kind, and only *May* falls under this Extreme of Weather; Wheat, that ſhould now appear with a very deep, green Colour, and broad Blades, will ſhew itſelf reddiſh at their Ends, or yellowiſh and ſickly; and the more, if Inundations of Waters cover Valley and other low Grounds, when but a Yard or two's Breadth is to be ſeen on each Side of a Ridge-land free of Water, then it is, that the Vale is in Danger of being fed by the Hill, according to the old proverbial Obſervation:

When the Sand doth feed the Clay,
England *Woe and Wail-a-day!*
But when the Clay doth feed the Sand,
Then it is well with England.

For *A* May *Flood never did* England *Good.* Hence the old Obſervation had its Riſe——

A cold May, *and a windy,*
Makes a full Barn, and a findy;

Becauſe a cold and dry *May* prevents the luxuriant Progreſs of Weeds, by checking them, and giving the Wheat an Opportunity to maintain itſelf in ſuch a moderate Growth, as to keep the Weed under, and yet not run into that Rankneſs of Stalk which ſometimes occaſions the Loſs of the greateſt Part of the Crop. This Conſideration leads me to take notice more particularly of the two Extremes of Weather that have affected Wheat in *May.* If a hot, dripping Time attends this Month, it is very likely to force the green Wheat to run ſo faſt into high, heavy Stalks and Ears, as to cauſe them to bend under their great Weight,

as being loaded with Sap, and the Water of Rains, while they are in their tender green Age, and weak Condition; then, if the Wheat continues couching and falling down, it is in great Danger of producing poor thin Kernels, and conſequently a half or quarter Crop at Harveſt; becauſe, by ſuch Bent or Fall of its Stalks, the Sap is checked in its Aſcent, and cannot feed the Ear in due Time, nor with that Plenty of it, as is neceſſary to fill and inlarge the Kernels to their deſired Bigneſs. This Evil is likewiſe ſometimes increaſed by the Fall of Honey-dews, which, by this couching Poſture of the Wheat, have the greater Opportunity to fall, and make a Lodgment on its Stalks, that they ſpot and blacken with their burning Quality, and which tend to ripen the Straw too ſoon, hinder ſuch Nouriſhment being conveyed to the Corns, as would otherwiſe feed them in great Perfection; and thus theſe Dews prove another great Impediment to leſſen the Farmers Crops of Wheat.

On the contrary, if it happens to be a very cold wet *May*, as ſometimes it is, to that Degree, that a Blackbird has been killed on its Neſt, and the Cow made to quake by its extreme Sharpneſs, then the Roots of this Pay-rent Grain will be probably chilled, and many of them killed; and then it is, that the Farmer's Arch-enemy, the Weed, ſoon triumphs, by getting full Room to inlarge its Roots, ſpread its Branches, grow into high Heads, and carrying its Dominion over the Wheat, to the Deſtruction of great Part of the Crop; which before, by kinder Seaſons, remained Maſter of the Field, and ſubdued the Weed. This is the main Month of all the Year for diſcovering Plenty or Scarcity of Wheat, Barley, and other Grains and Vegetables; for, as their Condition is in this Month, an Eſtimate, in a great Degree, may be made of their good or bad Succeſs, ac-

cording to the Nature of the Weather that attends their Growth, as I have before obſerved: Which Caſe ſo governs the Conduct of many who are concerned in the Trade and Uſe of them, that they forbear furniſhing themſelves with great Quantities of Wheat, Barley, and other Grain and Fruits, *&c.* till they ſee *May* paſt, for being the more able to form a Judgment with the better Aſſurance of the Produce the preſent Year is like to be attended with.

How a conſiderable Number of Soldiers improved a Wheat-crop.—It was in the Spring 1742-3. when a conſiderable Number of Foot-ſoldiers marched from the North to the South Part of *England*; and, as it happened, two Companies of them came into one and the ſame Town in *Hertfordſhire*, to be quartered, inſtead of one Company, becauſe one miſtook their Way to another Town which was ordered them by their Route: And, being here, the Landlord of the biggeſt Inn, who rented ſome Fields behind his Houſe, that were a chalky Soil, deſired their chief Officer to exerciſe his Men on one of them, that had Wheat growing in it, and he would treat them all with——. Accordingly the Officer complied with his Requeſt, and exerciſed the two Companies thereon, that trod down his Wheat to the Purpoſe; for, you muſt know, this chalky Soil is of ſo looſe a Nature, that they ſeldom could get a tolerable Crop of Wheat off the ſame; becauſe, though they ſowed the Seed in ever ſo good a Seaſon, yet the Froſts and *March* Time generally looſened this crumbling ſhort Earth about the Wheat-roots, and dried them ſo much, as to give the After-rains and Winds Power to beat and lay down the Stalks and Ears of this rich golden Grain, ſo as to make it a poor ſilver Crop by reaſon it had not a Foundation ſtiff enough to ſupport them in a due Erection. But

by the Soldiers trampling on this Crop during all the Time of their Exerciſe, they trod the Wheat ſo cloſe down, and faſtened the Earth ſo firm about its Roots, that the Surface became cruſted into a hard Conſiſtence, which exactly anſwered the Owner's Deſire; for on the third Day of this Month there was a fine Appearance of a promiſing plentiful Crop at Harveſt, and accordingly the Wheat grew up with large Stalks and Ears; and though this Field lay in a very high Situation, facing the North and Eaſt; yet, by the Soldiers treading, the Roots received ſuch Strength, as enabled them to ſupport the Wheat againſt all the Violence of Winds and Rains that afterwards happened; and at laſt produced a plentiful Crop, that fully anſwered the Innkeeper's Satisfaction.

CHAP. IV.

Of French *or Buck-wheat.*

WHY ſome think ſowing French *Wheat in the Broad-caſt way is better than when it is ſown in Drills.* — In my Monthly Book of the Modern Huſbandman for *May*, I have written very particularly on this ſerviceable Grain; but I have not there made that Diſtinction I ſhould have done, between ſowing this Wheat in the broad Land, and in the Drill-mode, and therefore here I ſhall endeavour to ſupply the Deficiency. In all my Travels I never ſee this *French* Wheat ſown any other Way, than in the Broad-caſt Faſhion; becauſe they think it ſo good a Way, that none can exceed it, as being the greateſt Weed-killer of all Field Vegetables, by means of its branching, and growing, with its large high Stalks, into very bulky

bulky Crops, and with ſuch Expedition, as gives a Farmer an Opportunity of ſowing it in *May*, and yet to mow it, for plowing it in, as a Dreſſing to nouriſh a Crop of natural Wheat in *July*: Thus *French* Wheat kills Weeds in the cheapeſt Manner poſſible, and yet may be injoined as an Improver of a poor hungry Soil, or to ſtand for mowing it as a Crop of Seed. About *Chaffon*, that lies between *Amerſham* and *Uxbridge*, they ſow much of this Seed on their gravelly Soils, ſome for plowing it in at Bloſſoming-time, and others, for the great Quantities of triangular Grain that it produces, which ſerves their Farmers to fat their Swine, at a very eaſy Rate, and in a very ſhort time; for this Grain, if rightly managed, will be greedily eaten by them and Poultry; and, ſooner than moſt other Corn, will breed Fleſh on Horſes, Cows, Sheep, and other Beaſts. But a certain Farmer in theſe Parts proceeded in a Way of getting a Crop of *French* Wheat I never heard of before.

A new Way of ſowing French *Wheat.*——Near *Rickmanſworth* in *Hertfordſhire* a Farmer ſowed a four-acre gravelly Field with Hog-peas Broadcaſt; and after theſe were ripe, and got off the Ground, he immediately plowed up the ſame, and harrowed in Rye for feeding his ſuckling Ewes in *February*, *March*, and *April*. When the Rye was eaten off, he plowed up the ſame Ground on the Fourth of *May*, and on the Thirteenth following he plowed the ſame again all in Broad-lands, and then found the Earth fine enough for his Purpoſe; and that was this: He ſowed, on each Acre of this incloſed Field, three Pecks of *French* Wheat, and one Pound of Turnep-ſeed Broad-caſt, and harrowed all in together. The Wheat was ſown to plow in for a Dreſſing to the Ground, and ſo once or twice more afterwards,

in

in order to get it rotted and well-mixed with the Land for ſetting a Crop of natural Wheat on the ſame. And the Turnep-ſeed of the *Dutch* early Sort was ſoon to pull up in *July* for the Farmer's Pot, and to ſell in Harveſt-time; and as the *French* Wheat was ſown in leſs Quantity than uſually is done for an intire Crop, it grew thin, and gave a Man the more Room to pull up the Turneps; and though he was obliged to tread down ſome Part of the Wheat, yet, as it was to be plowed in, the Damage was of the leſs Conſequence. After the Turneps were got off, and the *French* Wheat plowed in, and the ſame Ground plowed till it was got into a fine Tilth, the Farmer ſowed it with natural Wheat in *October* following; and in *May* 1742. the Wheat made ſo fine an Appearance as promiſed fair for a full Crop at Harveſt.

How French *Wheat may be improved by the Drill Husbandry.*——I am here about to undertake what was never written of before in reſpect to the ſowing of *French* Wheat in Drills. Yet I am ſure it may be done three ſeveral Ways: If a Perſon would have an intire Crop of this Wheat grow in the Drill-mode, he may ſow the Seed out of the Hopper of the Drill-plough, in Drills at Twelve Inches aſunder; but then the Land ought to be firſt prepared by ſeveral Plowings, till it is in a fine Tilth, and at laſt laid in one intire broad Land; that is, it is to be ſo plowed, that there be no Water-furrows throughout the Field; if there is, the Drill-plough cannot rightly perform its Work; but when the Ground is got thus into Order, then the *French* Wheat may be drill'd in to great Profit; which I make out in this manner, *viz.* In the firſt place, the Land need not be dung'd for this Purpoſe, becauſe the fine Earth that falls of itſelf on the Seed, as ſoon as it is dropped out of the Hopper,

will

will ſufficiently ſupply it, by maintaining the Crop in a fertile Growth all the time after: And when the *Dutch* Hoe has been employed twice the ſame Summer (if once will not do) for clearing the Intervals of all Weeds, the Roots of the *French* Wheat will receive an Augmentation of Nouriſhment; and thereby be the better enabled to puſh on the Growth of its large high Stalks, and blooming Ears, with greater Expedition, than when the Seed is ſown in the promiſcuous or Broad-caſt Way; becauſe, by the twelve Inches Intervals, the Sun and Air have free Liberty to come at them with their benign Influences, that very much tend to forward the Ripening of all Vegetables they have a roomy Acceſs to; which is one (among many others) of the great Benefits attending the Drill Husbandry, that the random-ſown Seed, and its Branches, is very much deprived of: A Benefit that is more than ordinary neceſſary here, becauſe the ſooner the *French* Wheat is in Bloſſom, the ſooner it may be plow'd in to dreſs the Ground for a Crop of natural Wheat, and have the more Time to rot, and thoroughly mix with the Earth, againſt the next *October* Sowing-ſeaſon. Now the Advantage of ſowing *French* Wheat in the Drill-way, for preparing Ground to ſow a Crop of natural Wheat on the ſame, is this: It ſaves the Charge of the greateſt Part of twenty or thirty Shillings, neceſſary to be expended for Dung or Manure, and its Carriage to the Field, to dreſs only one Acre of Land; an Article of great Conſequence to all thoſe who rent or own incloſed, ſandy, gravelly, or dry loamy Soils: For, in dreſſing ten, twenty, thirty, or more Acres of ſuch Land, there may a great Sum be ſaved by this very means of ſowing *French* Wheat-ſeed in Drills; and the more, if the Ground lies at a conſiderable Diſtance from the Farm-houſe; for there

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is a wide Difference between the Expence of ſeven Shillings and thirty Shillings. If fifteen Loads of Dung be laid on one Acre of Land, to dreſs it for a Crop of natural Wheat; this, and its Carriage, is worth thirty Shillings at leaſt; when for three Pecks of *French* Wheat-ſeed and two Hoeings, the Charge will amount to but about ſeven Shillings an Acre, and yet will anſwer the Farmer's Purpoſe as well as Dung, and the better, as the Earth is kept cleaner from Weeds, than when *French* Wheat grows promiſcuouſly on it; and as much in a fine Tilth, as if nothing grew on it in all the fallow Summer-ſeaſon. Likewiſe, when this drill'd Wheat is arrived to its blooming Growth, it may be then mowed down, and ſcattered by Fork all over the Land, ready for the Swing, or other Plough, to work acroſs the Ground, and plow it in as well as if it grew in the random Poſture. Another Way to improve *French* Wheat, is to ſow it in Drills with Turnep-ſeed in the Intervals, in Oppoſition to that before-mentioned; which gives an Account, how a Farmer ſowed his *French* Wheat-ſeed and Turnep-ſeed together, by broad-caſting them over all the Ground; that, conſequently, produced poor little Turneps, and did the *French* Wheat ſome Harm beſides; for, as they grew in this Poſture, there was no ſuch thing as hoeing the Turneps; therefore they muſt grow, as it were, in a wild manner, be rather more Leaf than Root, and greatly impoveriſh the Ground by drawing them; and the more, if it was not firſt dung'd before the Wheat and Turnep-ſeed were ſown; whereas, by drilling-in the *French* Wheat-ſeed in Drills, at four Feet aſunder, and ſowing the broad Intervals with Turnep-ſeed in a fine Earth, without any Dung or Manure, the Wheat and Turneps may be ſo cleverly hoed, as to cauſe them both to be large Crops, if a kind

Seaſon

Seaſon of Weather attend their Growth. It is then a Profit may be raiſed, much ſuperior to that got by ſowing *French* Wheat and Turnep-ſeed in the Random-way; becauſe the Stalks of the firſt, and Roots of the laſt, will, by drilling and hoeing, be abundantly larger than them, and ſooner ripe, for ploughing one in, and drawing the other; and, after the *Dutch* forward Turneps are ſo drawn, and ſold off, the *French* Wheat may be mowed as before, and with Forks ſcattered about, and ploughed-in for a Dreſſing to a ſucceeding Crop of natural Wheat; where, I ſuppoſe, it will do altogether as much good as the former *French* Wheat ſown in the Broad-caſt way did; becauſe there will be near, if not quite, as much of it grow in Drills, as in the other Poſture: Or, if a Perſon thinks fit, the Turnep-ſeed may be drill'd as well as the *French* Wheat-ſeed, in Drills at fifteen or eighteen Inches apart, and eſpecially where a Crop of this Wheat is to ſtand for Seed; for then natural Wheat-ſeed may, in *October* following, be ſown in Drills made in the middle of each of the former Intervals: And thus all the three Crops may be made to redound, in a very great degree, to the Farmer's Profit; becauſe, by this very means, all Charge for Dunging or Manuring is here intirely ſaved.

CHAP. V.

Of Barley.

HOW to ſow Barley with Succeſs in this Month.— It is an unuſual thing to ſow Barley in this late Month; but, as it has been done, and a good Crop ſucceeded, it may be ſo again, provided

the following Precautions be well regarded: and they are theſe, *viz.* Firſt, the Ground that may be put to this Uſe, ſhould be a fine, dry, rich Soil, or a fine, dry, poor one, well-dung'd before-hand, or afterwards manured. Secondly, the Barley-ſeed, if ſown naked, ſhould be the *Fulham* or *Putney* Sort, or a Sort that came laſt off a ſandy or other warm Earth. Thirdly, whether it be a Barley that came off a ſandy or any other Ground, it ought to be firſt ſteeped or infuſed in a proper Menſtruum or Liquor, and limed before Sowing, to prevent the pernicious Effects of too dry Weather (that now may be expected to follow) from retarding the Growth of the Barley-crop. Theſe things premiſed, I ſhall proceed to direct the Sowing of the Seed.

A new and very cheap Receipt, how to ſteep Barley-ſeed for fertilizing its Crop in the drieſt Seaſon, by the Infuſion of Copperas.——Get a large Tub ready, and put therein a wooden Tap, or braſs Cock, with a Tap, Wiſp, or roundiſh Basket, to keep the ſoaked Barley from choaking, or ſtopping up the Mouth of the Tap or Cock. When this is done, heat as much Water as will near fill a Pail; and, when it is heated ſcalding-hot, put in three Pounds of green Copperas, that, with ſtirring about, will quickly diſſolve; then directly pour this Copperas hot Liquor, by ſlow degrees, all over three Buſhels and a half of Barley, as it lies in the Tub; and likewiſe as much cold Mudgel, Hole, or Dunghil, or black Ditch-water, as will lie four or ſix Inches above the Barley-ſeed, which are all to remain in this Poſture from one Evening to the next, when all the Liquor is to be drawn clean off, and the ſoaked Barley laid in a Heap on the Ground, to lie and drain all Night: In the Morning, ſpread the Barley ſomewhat into a roundiſh Flat, and ſift ſlak'd

Lime

Lime over it, which mix well with a Shovel, and ſo again, till you think the Barley has lodg'd a thick Coat of the Lime; then put it into a Sack, and go to Breakfaſt for half an Hour; and by the time the Ploughman is ready to ſow it broad-caſt, I will engage it will be full dry enough for his Hand. This Quantity juſt ſows an Acre of Ground, that muſt be harrowed-in according to the Directions I have given in my modern Huſbandman for the Month of *May*: And for ſteeping and preparing more Barley-ſeed ready for farther ſowing the Land, take the old Copperas Liquor every time, and return it into the Tub again; and ſteep three Pounds of Copperas more in hot Water, to be uſed in the very ſame manner you did the firſt; and add Dunghil, or other black Water, to three Buſhels and a half of Barley-ſeed, that is to be limed and ſown as the laſt was. Thus you may proceed from Day to Day, getting your Barley-ſeed completely ready for ſowing with ſo little Trouble and Coſt, that, in Conſideration of the very great Advantages attending this excellent Piece of new Husbandry, no one, in my humble Opinion, has the leaſt Reaſon to grudge their Time, their Labour, nor their Expence, on this Account. As to the Time and Labour requiſite to be ſpent in the Preparation of the Barley-ſeed, it is no ways detrimental to the Farmer's Intereſt; becauſe the Ploughman, if he lives in but a Farm of eighty Pounds a Year Rent, would do little or nothing the mean while: And as to the Charge of the Copperas, I have bought it ſeveral times in the Country for Two-pence a Pound at the worſt hand; which makes me believe, it may be had cheaper in *London*. Who then would grudge to beſtow Six-pence on every Acre of Land that is to be ſown with Barley, when perhaps this ſmall Sum may be the Cauſe of getting

the Farmer four Pounds? Which I pretend to prove the Chance of, thus: I will ſuppoſe the Soil to be a Chalk, a Sand, a Gravel, or dry Loam; for theſe are the propereſt Sorts for producing the beſt Barley, and the biggeſt Crops of it: And that one of theſe has been ploughed till it has been got into a pure fine-powder'd Tilth, and richly dreſs'd; for Barley, beyond all other Field-Grain, demands theſe two Requiſites. I will alſo ſuppoſe, that a long dry Time directly follows the ſowing an Acre of Ground with all dry Barley-ſeed: If ſo, how ſhould ſuch dry Seed, ſown on warm dry Land, come up in a regular Growth; ſince the Earth, in this Condition, is not able to do it, by reaſon the Barley-corns lie in three ſeveral Depths, or Stratums, of the Ground, where the Sprout of the loweſt will in courſe appear firſt, becauſe here the moſt Moiſture and Shade attends it? The next upper Seed will ſucceed; and the laſt, or that which lies neareſt the Surface, will conſequently be the lateſt in its Growth; and thus hold it till Harveſt, if Rains keep off for ſeven, eight, or more Weeks together, as in ſome dry Summers it has done. In this Caſe a Perſon has little Reaſon to expect more than three or four Quarters of Barley, at moſt, on an Acre, in Return for ſowing four Buſhels of Seed; becauſe, at Harveſt, ſome will be ripe, ſome half-ripe, and ſome in its Hoſe or green Ears: But when the Barley-ſeed is duly ſteep'd and limed, the Crop, in the drieſt Time, will ſprout almoſt all together, and continue its Growth, till it gets Blades broad, high, and thick enough to ſhade its Roots; and then ſuch Cover alone, with the Help of Dews, will carry it forward, till it arrives to a fine, large, full Crop, that undoubtedly will produce ſix, ſeven, or more Quarters, from off every Acre of Ground, in a true, even Order

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of Ripeneſs, and moſtly of one Bigneſs, that qualifies its Corns to make the beſt of Malt.

A farther Account of the Benefits attending ſteeped Barley-ſeed.——And what I have farther very particularly to remark on this Subject is, that the Steeping of Barley-ſeed moſtly redounds to the Farmer's Intereſt, when the drieſt Summers happen; for then they who ſow this Seed dry, have the leaſt Crops, and thoſe of the worſt of Barley, which, in courſe, raiſes the Price of this Grain to twenty, five-and-twenty, or more Shillings a Quarter; and this for a Medley of unripe and unſizeable Corn; which certainly gives thoſe Farmers, who ſteeped their Seed, a ſuperior Opportunity of ſelling their ripe, plump, even Barley, for Shillings more a Quarter, than thoſe can who ſowed their Seed dry. This leads me likewiſe farther to obſerve, that in my ſaid Book of Husbandry for *May*, I have publiſhed a Receipt, how to make a Compoſition with Nitre for ſteeping Barley-ſeed therein, and preventing the Miſchiefs that a long dry Seaſon may bring a Crop of it under: But, as Nitre is rather too chargeable for many Farmers Pockets; it has diſcouraged Thouſands from making Trial of it, though it would certainly be to their vaſt Advantage. I have therefore been induced to publiſh this moſt cheap Copperas Receipt, that I myſelf have ſeveral times made uſe of to my great Benefit; for which Reaſon my Readers may depend on its being wrote from the Field of Practice: And I hope this plain Account of its Succeſs, and the ſmall Coſt of the Ingredient, will tempt great Numbers of Gentlemen and Farmers into the frequent Uſe of it; for if once it becomes a general Practice to ſow ſteeped Barley-ſeed, I am ſure the Nation, in a great meaſure, will be delivered from that infinite Damage, that, in ſome dry Summers, attends Barley-

ley-crops, whoſe Seed was ſown in the old naked Manner, and mowed in two or three Degrees of Growth; for then it is impoſſible to make a true Malt of it; and if the Malt is not good, I am ſure the Ale and Beer made from it cannot be ſo; and then what muſt thoſe People ſuffer, whoſe Number are by far the greateſt Part of the Kingdom? Why, they muſt drink a poor wretched Malt Liquor; and the worſe, when it is brewed in a wrong Manner, abuſed by the too-long Boiling of Hops into a nauſeous unhealthy Bitter, and loaded with the deadly, ſaline, and ſulphureous Tincture of a large Quantity of Yeſt, that has been beating into Ale a Week, or more, together in Winter, and a few Days into that and Butt Beer in warmer Weather, for ſaving, perhaps, two Buſhels of Malt in eight, which ſuch Male-practice will certainly effect; and yet the Drink will be full as ſtrong as that brewed from eight Buſhels, in the fair honeſt Way of brewing it.

The ill Effects of ſowing Barley-ſeed dry in Drills. ——This dryiſh Summer, 1743, manifeſtly proved the ill Effects of drilling Barley-ſeed dry; for, in the ſeveral Fields that I beheld in my Journeys this Year, I ſaw not one of them under a full Crop of drill'd Barley, becauſe the Seed was ſown dry and naked out of the Hopper of a Drill-plough; and, as it was ſown dry, the ſmall Showers that happened, afforded not ſufficient Moiſture to bring foward a plentiful Crop. A Field of Barley, ſown in Drills, requires rather more Rain than when it is ſown broad-caſt, by reaſon the Seed lies deeper, confined in a more narrow Compaſs of Ground, than that harrowed in. Now, as the Barley is ſown thus in Drills at a Foot aſunder, the Sun and Air have great Room to come at and dry the Seed, or its Roots, more than when the Seed

is ſown thick in the Random-way, where their Roots and Stalks grow ſo cloſe together, that one helps to defend the other againſt the Damage of Droughts. In Drills the Barley-ſeed lies ſo thick, that, when it is ſown dry, one Seed hinders another, in a ſmall Degree, from ſprouting into a regular Growth, if Rains do not fall in time, and in ſuch Plenty, that all the undermoſt, middlemoſt, and top Seed have their full Share of Moiſture; if they have not, I am ſure there will not only be a very ſcanty Crop at Harveſt, but the Barley will be of two or three Sorts of Growth; which leads me to conſider the Benefits that attend Barley-ſeed firſt ſteeped in a fertile Liquor, and then ſown in Drills by a Drill-plough.

The good Effects of ſowing ſteeped Barley-ſeed in Drills.—As this is a Summer Corn, and has but a few Months to perfect its Crops in, and they the hotteſt, and commonly the drieſt, in the whole Year, the Seed requires a moiſt Aſſiſtance the more, to bring on its Growth in a regular and due Order. Barley ſown in narrow Drills, ſome of it will be ripe ſooner than others, and produce both ſmall and larger Ears at Harveſt, according as the Seed lies bedded in the Drill for enjoying more or leſs of the Earth's Aſſiſtance, a Fault that conſequently attends drill'd Barley, if Rains fall in Seaſon; but if they do not, the Evil is increaſed. Hence then comes in the great Benefit of firſt infuſing the Barley-ſeed in a fertile Liquor, that gives all Seed, ſteeped in it, full Room to imbibe as much of it as they can receive; and when it is ſaturated, and received its full Quantity, it carries the ſame into the Drill, under a nouriſhing Coat of Lime: And whether Rains fall, or not fall, in time, the Barley-ſeed will ſprout almoſt all at once, and puſh on a Growth of green Blades and Stalks with great Expedition and Strength; and Expedition

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is one great Means for enjoying a full Crop of Barley in its higheſt whiteſt Perfection, becauſe it will be ripe, while the Days are long, and the Nights ſhort; which gives the Farmer the beſt Opportunity of curing it after mowing, in the Field, and houſing it in dry Order afterwards.

Why Vale *Farmers ought to ſteep their Barley-ſeed before Sowing.*——By this time, I think, I have made it fully appear, how much it is to a Farmer's Intereſt to ſteep all his Barley-ſeed: And, therefore, the Copperas or Nitre-Receipt ought to be put in Practice by both *Vale* and *Chelturne* Farmers, whether they ſow their Barley in the Random or the Drill-way. I have heretofore wrote largely on this Account, how ſteeped Barley is to be ſown by a *Chelturne* Farmer; and now come to be ſomewhat particular in Behalf of the *Vale* Farmer. As to a *Vale* Farmer, whoſe Land is of a clayey or ſtiff loamy Nature, I cannot ſay it is for his Benefit to ſow Barley in Drills; but I ſay this, that although he ſows it broad-caſt, it is much his ſurer and more profitable Way to ſteep his Seed firſt, as I have before adviſed; becauſe, by this, he is delivered from the Damage of Droughts, that may directly ſucceed his Sowing, for aught he knows, and hold for Months together; and then his Crops may turn out but half his uſual Quantity. Or, ſecondly, if Rains fall in due Order and Time, his ſteeped Seed, carrying with it a great deal of fertile Liquor and Lime into the Ground, will certainly enable it to become the greater Crop. Or, thirdly, in caſe his *March* ſown Barley is flooded by *April* or *May* Showers, that may fall in ſuch Quantities as to drown the lower Parts of the Ridge-land, and keep the Barley-roots under Water for ſome time; then, I ſay, it is, that the ſteeped Barley will ſuſtain ſuch Damage better than naked-ſown Barley;

becauſe

becauſe the ſteeped will get a ſtronger Root ſooner than the other. Or, fourthly, if Rain happen to fall in haſty Showers preſently after the Barley is ſown, it ſometimes occaſions the Surface to run into a Pancake Conſiſtence; and if a dry Time preſently ſucceeds this, the top Earth may become ſo cruſted and hard, as to hinder many of the infant Sprouts, or Blades, from making their Way into the Air; and then, in courſe, great Part of the Barley-crop will be loſt: But, by ſowing ſteeped Barley, the Farmer has no Occaſion to be under any Apprehenſion of this ſort; for if ſuch Weather ſhould chance to follow the Sowing of the ſteeped Seed, the Blades will make their Way through, as having ſufficient Strength at their Roots to maintain them in a vigorous Growth. But there is a farther Advantage than what I have here obſerved, attending ſteeped Barley-ſeed: Any *Chelturne*, or *Vale* Farmer, may, with ſome Aſſurance, ſow ſuch Seed late, even throughout *April*, or in the Beginning of *May*, and yet have good Reaſon to hope for a plentiful ripe Crop in due time. This is one great Perfection of ſteeping Barley-ſeed, which I pretend to prove thus: Suppoſe a Farmer is hindered by either Multitude of Buſineſs, or by a long Seaſon of wet Weather, from ſowing his Barley-ſeed till even *April*, or early in *May*, and he ſhould then ſow his Seed in the naked Way, he muſt certainly run a very great Riſque of getting a full Crop of Barley; becauſe, if dry Weather ſhould ſucceed, the Miſchiefs I have before mentioned will conſequently enſue, to his great Loſs: And, if a warm rainy Seaſon ſhould follow, there may be a great deal of Straw, and little Corn; whereas, when the Barley-ſeed goes into the Ground full-ſteeped and limed, it will directly, with great Expedition, grow up, and join Aſſiſtance with the Rain, to

propagate and forward a great Crop of Corn. I know a Farmer, who finding himself neceſſitated, thro' Multitude of Buſineſs, to defer ſowing his Barley late, and who, having no Notion of any Ingredient that could tend to the multiplying of late Barley-ſeed, he ſteeped it in common Water, limed it, and ſowed it; and though his Neighbours had ſowed their naked Barley-ſeed a good while before he did his, yet his Barley was ripe as ſoon as theirs, and a much better Crop. Now, to all this, I have farther to obſerve, that Gentlemen, or Farmers, may proceed thus far in ſowing ſteeped Barley-ſeed, either in broad Lands or Drills, and yet miſs of a good Crop, without having Reaſon to impute the Miſcarriage to the ſteeping Part; for, where the Ground is not beforehand duly prepared by ſeveral Plowings, and brought into a fine Tilth at Sowing-time, it may be the Means of hindering a full Crop at Harveſt; or if Rains fall in the Time of ſowing, or harrowing of the Seed in, it may occaſion the Loſs of great Part of the Crop; or if ſevere Froſts happen in *April* or *May*, it may ſo check the Barley-crop, as to ſpoil the major Part of it, or do it a leſſer Damage; and the ſame by Inundation of Waters.

CHAP. VI.

Of the Improvement of Beans, &c.

HOW ſome Farmers have Opportunities beyond ſome Gardeners, to ſow and improve Crops of Beans, Peas, Turneps, Carrots, Parſneps, Potatoes, Cabbages, and ſeveral other Vegetables.——A Farmer, eſpecially one who rents an incloſed Farm, and can

can with more Aſſurance call his Crops his own, than he who rents his Land in open Fields, has ſome Opportunities equal with a Gardener, to propagate ſeveral Sorts of Vegetables, and even better than he can in reſpect of Room; for there are many Gardeners that live altogether by their Profeſſion, and rent Ground that does not give them the Liberty of making uſe of a Plough, by reaſon of the narrow Quantity of their Land, or that Fruit or other Trees, or Shrubs, or culinary Vegetables, which are ſown in moſt Months of the Year, ſtand in the Way, and oblige him to do all his Work by the tedious and chargeable Spade, which, although it may perform its Operations better than the Plough, becauſe it may be made to dig deeper than the Share can go, yet a Plough, in ſome other reſpects, will do its Work as well as that antient Tool, and diſcharge more in one Day, than twelve or twenty Men can by the Labour of any Hand-Inſtrument; which renders the Gardener's Charge for preparing his Ground for Sowing, much greater than a Farmer's, who, having a great deal of Room at a ſmaller Rent, has the Liberty of enjoying Crops of Turneps, Carrots, Parſneps, Potatoes, Beans, Peas, Cabbages, Onions, and many other Things, in the cheapeſt Manner poſſible; and the more, ſince the excellent Drill-plough is invented, that will ſow large and ſmall Seeds out of it in the trueſt and moſt expeditious Way; inſomuch that no Man's Hand can ſow Seed ſo true as the Drill-plough can, and which will make more Drills, and ſow more Seed in them in one Day, than many Men can in the ſame time. The like Conveniency may be enjoyed by the Uſe of the new-found-out profitable Horſe-break, which, in a Field, will hoe up more Ground between Beans or Peas, *&c.* in one Day, I believe I may ſay, than ten Men can

do. And it is like to prove a happy Invention not only to the Farmer in particular, but likewiſe to the Nation in general; becauſe theſe new Machines, with ſeveral others (I may ſay many), that I intend to diſcover in my future Works, will not only ſave him great Expences, and bring him in a great deal of Profit; but they will be the Means of employing many poor Men, who would not be ſo much employed, had it not been for theſe Inſtruments. This I pretend to prove, by aſſerting, that as one and the ſame Field may be every Year ſown with Grain for Time out of Mind, without making it lie fallow, there will be much more Corn got than in the old Husbandry; and conſequently more Reaping, Mowing, Threſhing, and other Work done by poor Men, as well as Hoeing; for though the Horſe-break hoes and turns the Earth beſides, two different Ways; yet the Hand-hoe comes in afterwards for ſome Labour to pull the Mould cloſer to the Stalk, than the Break can ſafely do, if a Farmer is not a very great Sloven indeed. Thus, I hope, I have made it appear, in ſome Degree, that theſe new Inſtruments are of great Service to the Farmer, who, as he is the chiefeſt Artificer in the Nation, ought to have the moſt extenſive and moſt beneficial Aſſiſtance given him of all others whatſoever.

The Method and Benefit of ſowing Broad or Hotſpur-beans in this Month.——The Sowing of Beans ſo late as in this Month, is practiſed but by very few Farmers; and they muſt be thoſe who are Maſters of warm rich Soils. Here indeed they may be ſown in an incloſed Field; but they muſt be of the Hotſpur-kind, as the *Venetian*, the *Spaniſh*, or the *Portugal* Bean; for theſe, being of a forward growing Nature, eſpecially if they have been directly imported, and not ſown in *England* before, will proſper and bear much, though they

are

are ſown the earlieſt and the lateſt, even from *October* to any Time in this Month; if now, they ought to be ſown in Drills, and not ſet, becauſe they will, in the former Way, make their Growth quicker than in the latter; and quicker and more fertile ſtill, if the Seed is firſt prepared according to Art, as I ſhall preſently ſhew: But theſe Sort of Beans cannot be ſown out of any Drill-plough ſo well as the Hand, as ſome think: However, hereafter I hope I ſhall be able to convince them, they may be better. In the mean time, I ſhall proceed to my intended Purpoſe of diſcovering a new Improvement for forwarding and increaſing latter-ſown Bean-crops; which ought to be the more regarded, as a very late Crop ſells for as much Money as a forward Crop; Scarcity makes the Rarity; and as Art helps Nature, theſe Beans may be ſo managed, as to force them to throw out their firſt Sprout or Shoot in a little time, and be thus made to produce a profitable green Crop, after the broad Beans are ripe, and ſold off.

How to ſteep broad Beans, ſo as to forward their Growth with great Expedition.——This Secret is of great Conſequence to all thoſe Farmers who ſow theſe Beans in Fields, for ſelling them in their green Condition; as is the Practice of many of our *Hertfordſhire* Men, who, being Occupiers of loamy Soils in incloſed Fields, make it one Branch of their Buſineſs to get Crops of the broad *Windſor*, the *Sandwich*, and the Hotſpur-beans, to ſell in their Pods at Markets, and about the Country. And indeed, ſince ſome Farmers have thus engaged themſelves in this neceſſary Branch of Huſbandry, the Country has received a conſiderable Advantage by it; becauſe the Gardeners, who generally rent but little Ground for this Purpoſe, produced ſo few, as to cauſe their Price, diſagreeable to the Farmer's Pocket: But now we commonly

monly enjoy a former and latter Crop of them, to our great Convenience: And, that we may do ſo in the beſt and cheapeſt Manner, mix either Coal or Wood-ſoot with Urine, and in this Mixture ſteep a Parcel of Hotſpur-beans three or four Hours at leaſt, and ſow them as follows:

Firſt Way.——You may make Drills with a Drill-plough, or with any other narrow Plough, in which theſe Hotſpur-beans may be dropped out of a Man's Hand, at two or three Inches apart, in Drills made at two Foot aſunder; then, with one or more light Harrows, the Beans may be eaſily covered with Mould, and ſuffered to grow, till they are fit to be improved by the moſt excellent Horſe-break.

Second Way.——Or, after the Ground has, by a former Ploughing or two, been got into a tolerable Tilth, you may now, with a narrow Plough, plough the Land into narrow ſmall Bouts, which is performed by laying one Furrow of Earth up againſt another (an Operation well known to right *Hertfordſhire* Ploughmen, who, I dare preſume to ſay, are the greateſt Maſters of ploughing Land in various Shapes of any Ploughmen in *England*); by this means there will be a Furrow or Drill at about two Foot aſunder from each other, wherein a Man may, by his Hand, drop out thoſe Beans at a proper Diſtance from each other: But ſome Farmers think it an eaſier and more expeditious Way, after the Land is thus lain up in ſmall Bouts, to ſow theſe Beans out of the Hand, after the broad-caſt Mode of Sowing, for that they will in courſe fall into the Furrow; and if any ſhould chance to lodge on the Ridge-part of a Bout, they may be taken and put into the Furrow: And, when the Beans are thus ſown, the next Thing to be done is to cover them with Mould; which to do, take one or more light Harrows, and

draw

draw them along the Bouts longwiſe twice in a Place; and then the Operation is over for the preſent; for they muſt not be harrowed croſswiſe at all, leſt the Harrows tear up and miſplace the Beans, which, when once in their Bed, muſt not be diſturbed in the leaſt, till the Horſe-break or Hand-hoe is employed between their Rows, to kill the Weeds that may grow up in the Intervals, and for Earthing up to their Roots, to forward their Growth with the greater Expedition: For which Purpoſe, this Way of ploughing the Ground in little Bouts, gives the Horſe-break or Hand-hoe a great Advantage of pulling down a ſufficient Quantity of Earth towards the Roots and Stalks of the Beans; becauſe this Sort of Ploughing, after the Harrows have been made uſe of, leaves the Mould a little higher than ordinary in the Middle between the Rows, which the better ſerves to aſſiſt and fertilize the Crop of Beans, and is ſo cheap, quick, and profitable an Operation, that, of late, ſome of the moſt acute Farmers who are acquainted with it, follow this very Method of ſowing their Peas and ſmall Beans, preferable to all others, where the Ground will admit of it; for in Vale ſtiff Earths, where the Land is always ploughed one Way, this ſort of Ploughing and Sowing cannot be performed, nor where the Land is too ſtony: Which ſhews how neceſſary it is for a Ploughman to be thoroughly acquainted with his Buſineſs; as I ſhall farther obſerve.

How neceſſary it is for a Ploughman to be Maſter of his Buſineſs.——A Gentleman ſent me a Letter, which I received in *February* 1743-4, to help him to a Ploughman, that knew how to manage various Soils; and gave me a Commiſſion to offer ſuch a one very large Wages: In order to which, I ſent him one that I had qualified for the Purpoſe, by taking him with me into two other Counties beſides

beſides that I live in, and made him hold their different Ploughs, and other Inſtruments, which he was a Stranger to before; but, as he was brought up to the Plough in our Country, he preſently took the Knowledge of others, even in leſs than two Days time: And when I had made him thus Maſter of his Buſineſs, he was capable of holding any Sort of Wheel-plough, Foot, or Swing-plough, Drill-plough, or any other Plough or Inſtrument of Husbandry; which enabled him to plow any Soil, and ſow it with any Seed, as the Nature of the Land admits. Now this Gentleman acted more prudent than thoſe who have ſent to me for Ploughmen, and tied me down to a mean Price of Wages; becauſe, according to the Wages, ſo they may expect the Ploughman to be: And if he is one that is accuſtomed to hold only one Sort of Plough, he is not capable of plowing various Soils; for, according to the Nature of the Soil, and its Situation, ſo ſhould the Plough be. Thus when an unqualified Ploughman comes into a ſtrange Country, and he is to hold a Plough he never did before, and to work a Soil he never was uſed to, he muſt conſequently be at ſuch a Loſs, that before he can get Maſter of his Buſineſs here, he may do his Maſter many Pounds of Damage. This is a Matter of ſuch Importance, that it concerns all Gentlemen who hire Ploughmen, to work in different Soils, ſtrictly to take care they get them that are capable of managing and improving them; for upon this Servant's Care and Skill depends the chiefeſt Part of the Farm's Profit: And therefore, whoever ſend to me for a Ploughman, that is to be concerned in working various Soils, they ought to give me an Order to allow him encouraging Wages; and, if he is not already, to get him qualified, as I have before hinted; then, I am ſure, he will anſwer their Expectation,

pectation, by proving, that, for a little extraordinary Expence, they'll ſtand a good Chance of getting a great Profit.

CHAP. VII.

Of Sowing Peas in May, *Hoeing them*, &c.

HOW this Author ſowed the great Union blue Pea in Drills in this Month.——I am prompted to write this Chapter with the greater Pleaſure, becauſe I am ſenſible there are many brave Crops of Peas loſt on account of Perſons Ignorance, who, believing it too late to ſow Peas in this Month, forbear to do it; but I aſſure them it is a wrong Notion, either if they are deſigned for a green or a ripe Crop. On the 12th Day of *May* 1744, I drill'd-in the great Union blue Pea between my Rows of broad Beans in my Home-cloſe, when the Beans were about four Inches high; and on the 31ſt Day of *May*, the Peas, having had a Day's Rain on them about a Week after they had been ſown, were about two Inches high, and likely to be a good Crop green or ripe.

How a Perſon ſow'd a large white Pea in May, *and made a conſiderable Profit of them.*——An early or a late Crop of green Peas is well known to ſell for the greateſt Profit. A Neighbour of mine ſow'd ſome large white Peas the latter End of this Month, and ſold them in *September* in Peſcods or Shells for a good Price; and for this Purpoſe, I ſhall hereafter give an Account of a Pea ſown in *July*, that was ſo forward a Sort, as to yield green Pods in a Garden before Winter.

An Account of the quick Growth of a whitiſh Pea called the nimble Pea.——I was told that Sir ——

Twiſden had a Sort of Peas ſown in his ſandy Land, called the Nimble Pea, that was ripe at ſeven Weeks End in 1743, being the ſecond Year that this Sort of Pea had been made uſe of in his Part of the Country: They were ſown out of the Drill-plough, and horſe-break'd.

The Growth of the excellent Carolina *Pea.*—— This large whitiſh Pea, that is ripe early, and almoſt at one and the ſame time, was ſown in an incloſed Field in Drills out of the Three-wheel Drill-plough in *April*, at two Feet aſunder; and about the Eighth of *May* 1744, was horſe-break'd for the firſt time, with one Part of the Breaks Irons, juſt to ſtir the interval Ground, and prevent the Growth of Weeds: And a little before they began to bloſſom, they were horſe-break'd a ſecond and laſt time, when the ſuperficial Mould was turned on the Roots to their great Support and Nouriſhment; for on the 25th Day, theſe Peas were fourteen Inches high; and though they were ſown in a poor, pebbly, hungry, gravelly Soil; yet by this excellent new Husbandry, performed by the plaineſt Inſtruments that were ever invented, this Pea-crop made as fine a Shew as ever I ſaw in a Field in my Life; for this Horſe-break is ſo ingeniouſly contrived, that the three ſmall Hoes may be eaſily and preſently taken up, ſo as not to go too deep into the Ground, or lower'd at Diſcretion, for cauſing them to ſuit a hard or ſoft Ground: And ſo the Land-iron may be ſet wider or narrower, from nine Inches to a greater Width, for turning the Mould to the Rows of Peas, as the Ploughman would have it. Now there are three Sorts of Horſe-breaks that I recommend to be made uſe of, according to the Nature of the Ground; and therefore thoſe Gentlemen who ſhall think fit to employ me to furniſh them with theſe new and plain Inſtruments, ſhall

have thoſe that beſt ſuit their Soil; which is a Matter of great Importance, and ought to have a Regard paid to it accordingly; becauſe on this this very much depends the Succeſs of Pea and Bean-crops. In *May* 1744, I was deſired to ride with two Gentlemen about the Country, to ſhew them ſome Curioſities practiſed in the Art of Huſbandry; and, amongſt the reſt, their greateſt Admiration was, to ſee Pea-crops ſo very large and forward in this Month, that had been ſown out of the Hopper of the Three-wheel Drill-plough, and twice horſe-break'd afterwards: But they were moſt of all ſurpriſed at the Sight of ſuch plain-made Inſtruments; for one of them had been a Spectator of the very ingenious Mr. *Tull*'s Contrivances, and ſaid, his were made in ſuch Nicety of Order, as perplexed the Underſtanding of a ſhallow Capacity; and ſo chargeable and difficult to make and mend, as diſcouraged many to come into their Uſe.

Hand-hoeing Horſe-beans.——Near *Harrow the Hill* in *Middleſex*, on the 12th of *May* 1742, I ſaw them hoeing Horſe-beans with Hand-hoes, that were ſet acroſs their ſtiff wettiſh Lands by Women, with a ſharp-pointed Dibber, in Rows about eighteen Inches aſunder; and, being thus twice hoed, they paid their Owner much better than thoſe Horſe-beans that were ſown and harrow'd in the promiſcuous Way; for, as it was a dry Summer, the laſt was a very poor Crop, by lying ſhallow in the Ground, and being dried ſo much by the Sun, as almoſt ſpoiled them; while the ſet and hoed Beans, by lying deeper at firſt in the Earth, and afterwards being aſſiſted with the Cover of hoed Mould on their Roots, became an excellent Crop. The firſt time of hoeing, they drawed and worked their Hand-hoes along the middle of the Interval; and as ſoon as the Weeds

were wilk'd and kill'd, they hoed a ſecond time, by pulling the Earth up on the Bean-roots. Here the Horſe-break is not known.

How a Farmer ſet a Rood of Ground with broad Windſor *Beans, and how the Crop ſuffered by Mice.* ——A Farmer having dunged and prepared a Piece of Ground in his Home-cloſe, about a Rood in Quantity, in *February*, ſet it with his broad *Windſor* Beans in Rows, at two Feet aſunder; and about the 12th of this Month, had all the Intervals broke with Hoes, when the Beans in his loamy cold Soil and Situation were about four Inches high; but it happened, that good Part of his Bean-crop was ſpoiled by Hog or Shrew-mice, that bit off the Spire below and above the Surface; which they would not have done ſo much, had he ſet the Beans in Rows, contrary to the laſt Way the Ground was plowed in; but inſtead thereof, he ſet them the ſame Way the Ground was laſt plowed in, which gave the Mice an eaſier Opportunity to make their Entrance into the Earth in queſt of the Beans, as the Land lay this Way looſer than if the Beans had been ſet acroſs the laſt Ploughing; for theſe Shrew-mice having their Heads built in the Snout-faſhion, like that of Hogs or Moles, dig and penetrate a looſe Ground with Eaſe: And the Farmer had not Wit enough to ſet up Tile-traps, to catch them in the Field. Now, to make the moſt of this Rood of Ground after hoeing, he ſteeped ſome more broad Beans, in a Mixture of Urine and Soot, two Hours, which is long enough at this Time of Year; for if they are ſoaked too long in ſuch hot Liquor, and dry hot Weather ſhould ſucceed, they will be apt to burn and ſpoil: He therefore made Drills in the Intervals with a Carrot-hoe of three Inches wide, pretty deep, and laid in his broad Beans to come up as a latter Crop, to fell in their green

Pods

Pods in *Auguſt* or *September*. And when all the Beans were laid in the Drills, and covered by Hand-hoes with Mould, he trod the Earth upon them, the better to cloſe it on the Beans, and to keep out the Droughts. In this Part of the Country the Drill-plough and Horſe-break was not known.

A Way practiſed by the Leighton *Gardeners when they ſow or ſet Garden-beans in* May, *to make them come up in the quickeſt Manner.*——When they do this, the Beans are deſigned to be gathered while they are green, for ſelling about the Country in the latter Part of the Summer, when they expect a good Market for them. For this Purpoſe, and that they may come up in the quickeſt Manner, they put their Seed-beans into a Sack or Bag, that will hold them looſely; for if they are put in, and kept in a tight Poſture, they will be apt to ſwell, and burſt the Sack or Bag: Then let theſe Beans lie and ſoak in Water from Twelve a-clock in the Day till Six next Morning; for by that time they will be ſoaked enough to ſpire quickly after they are in the Ground. But this Practice they never follow, but when they ſet theſe broad Beans in *April* or *May*.

CHAP. VIII.

Of Clover.

HOW a Farmer had eleven Sheep killed in a Clover-field, by the Shepherd's falling aſleep in the ſame.——On *Thurſday* the 20th Day of *May* 1742, Mr. *B*——'s Shepherd bringing a Flock of Weather-ſheep from off *Dunſtable-Downs* to a Clover-field that lay near the ſame, he put them into it as uſual, but always watch'd and kept them from ranging farther than he deſired; and when he thought they had had a ſufficient Bait or Bellyful, he drove them out again to the Common, to remain

main here till Folding-time: But it happened on this Day, that the Shepherd fell aſleep in the Clover-field, and let the Sheep range all over it at their Pleaſure, till eleven of them, by feeding very greedily on this windy artificial Graſs, were ſo near burſting, as obliged the Farmer to have them directly ſtuck by three ſeveral Butchers, which he ſent for in all Haſte to prevent their burſting. Theſe eleven Sheep were worth fourteen Shillings a-piece as Store-ſheep; but, by this Accident, the Farmer made but little of them; for he gave a great deal of the Meat away, and the beſt he ſold for but Six-pence a Quarter.——Therefore beware of the like Danger; for, by ſuch means, a Farmer may loſe a whole Flock of Sheep in an Hour or two's time.

How the Author had ſome of his Cows hoved in Clover, and how he recovered them.——We *Chelturne* Farmers find it one of the moſt profitable Pieces of Husbandry to get Clover ready in this Month to feed our Horſes, Cows, Sheep, and Hogs, notwithſtanding the great Riſque we run of loſing the Lives of our Cows and Sheep. As to the firſt of theſe, my Way is (as I have heretofore deſcribed), to give each Cow, the firſt Morning they are turned into the Clover-field, an Egg-ſhell full of Tar, as the beſt Antidote we know of, to preſerve them againſt the ill Effects of this windy Graſs: And when once, by the Safety of this Remedy, they have filled their Belly, and emptied it, we reckon the Danger pretty well over of their burſting. However, there is ſome Danger ſtill remaining, eſpecially in a dewy Morning, or after a Shower of Rain, which increaſes the hoving Quality of this Graſs: And it ſo happened, that I had now-and-then a Cow hove by the ſame. But, as we are ſenſible of the approaching Danger, we watch the Cows the more narrowly; and, upon perceiving

perceiving their ſwelling or hoving, we drive them out of the Field, and immediately have the Cow held by the Horns and Noſtrils; and with an Horn I gave her three Pints of Urine mixed with an Handful of Salt, and ran her about for a Quarter or Half an Hour; and, when taken in time, it never fails ſinking the Swelling, and recovering her; elſe I had loſt ſeveral in 1743 and 1744.

CHAP. IX.

Of Weaning Graſs-lambs.

OF feeding ſuckling Ewes for fatting Graſs-lambs. ——By *May-day* all Field-turneps are generally eaten off, as well as that Rye which was ſown in *Auguſt* or *September* laſt, for feeding ſuckling Ewes, and their Graſs-lambs: Rapes or Cole likewiſe that was ſown laſt Year for feeding Ewes and Lambs in the Spring-ſeaſon, is by this time generally eaten off; ſo that there remains hardly any other Field-food now than natural and artificial Graſſes, and green Corn; which obliges the Meadow-Farmer to give over ſuckling his Houſe-lambs, that now are chiefly out of Seaſon, by reaſon the Graſs-lambs ſucceed in full Perfection, as having Meat in great Plenty, in incloſed Fields eſpecially: And therefore I ſhall here give a new Account how we feed our Ewes and Lambs in this Month on artificial Graſſes, and green Corn, in order to fat them for Market.

To feed Ewes with their Lambs on green Oats.—— This Piece of Management is moſtly confined to incloſed Fields; becauſe here we can put Ewes and Lambs in, and take them out at Pleaſure in the cheapeſt Manner, free of the Charge of a Man

Man or Boy's Attendance to keep them from ſtraying into a Neighbour's Ground; which is what can't be done in open Fields, where ſeveral Perſons Land and Corn lie together: And therefore that Farmer who rents incloſed Fields, and don't ſow Turneps, Rye, Rapes, and artificial Graſſes, or ſome of them, for feeding his Ewes and Graſs-lambs, is much wanting to his Intereſt; for by theſe, many *Chelturne Farmers* fat great Numbers of Graſs-lambs, which help to pay good Part of their Rent at an eaſy Rate. Formerly moſt Farmers were afraid to feed down their green Oat-crop, leſt the Cattle ſpoiled it; but Experience has proved, that this may be done to a great Advantage or Diſadvantage: Which being a Knowlege of conſiderable Conſequence, I ſhall here attempt to ſhew how the firſt may be done, and how the laſt is to be refuſed.

How to feed Ewes, with their Lambs, to a great Advantage, on a full Crop of green Oats.——To do this, the Nature of the Ground, and the Seaſon of the Year, ought in an eſpecial Manner to be regarded. If the Land is of the dry Sort, and in good Heart, and a kind moderate Seaſon ſucceeded, for ſome time, the Sowing of the Oats, thoſe ſown in *February* or *March* will now ſhew themſelves with broad Blades, in a ſpreading curling Condition, under a black green Colour, that ſeems to grow ſo rank, as to threaten the Farmer with a great Loſs, if they are not eaten down in this Month with Sheep and Lambs, by growing ſo rank afterwards, as to fall and be laid flat before Harveſt; and then the Crop will in courſe be good for little, as conſiſting of a great deal of Straw, and little Corn; and thoſe Oats that are, will be perhaps but half ripe, half-ſize, and half in Quantity they would otherwiſe be. Here the ſucking Ewes, with their Lambs, may be turned

in

in to graze under the following Preparation: Firſt, a Day or two before they are turned into ſuch green Oats, the Ewes and Lambs ſhould be fed on natural or artificial Graſs, that they may be glutted with their Belly-full of Meat, in order to prevent their too voracious feeding on ſuch green Oats, leſt they crop and eat them directly down ſo low as to damage the Crop; whereas, if they are firſt fed on Graſs, they will either feed on the natural Graſs of Baulks, if there be any in the Oat-field, or pick and eat out the Weeds among the Oats; for if they, through Hunger, crop the Blades of the Oats too much, they ſhould be taken out and ſhifted into another Field in due time. Secondly, In caſe the Spring has hitherto been attended with Froſts, or Chills of cold Rains, ſo that the green Oats are very ſhort indeed, the Ewes and their Lambs ſhould be kept out till they have acquired a Head capable of ſuſtaining their Bite without Damage; then a Farmer may enjoy a fine grazing Crop, without (if he takes care accordingly) hurting his Oat-crop; which will be an extraordinary Profit to him, even (it may be) to the Value of ten or more Shillings an Acre; for by ſuch a plentiful Feed at this Time of Year, the Farmer's other green Meat is ſaved, and made to hold out the longer hereafter, under the Feed of Sheep and Lambs, or other Cattle, the Ground cleared of choaking pernicious Weeds in the cheapeſt Manner, and greatly enriched by the Stale and Dung of the Beaſts, and the Oat-crop by this means forced on in a quick, rank, branching Growth, that very likely will produce not only a greater Quantity of Straw than ordinary, but likewiſe perhaps Quarters enough of full large Oats, of every Acre ſo fed and improved. This Caſe ſhews the Excellency of dunging and manuring Ground in full Perfection for a Wheat or

Barley-crop; becauſe, by ſo doing, the Land is got into ſuch Heart, as to bring on early full green Crops of Oats fit to feed the Ewes in this Month, and breed Abundance of Milk in them, for fatting their Lambs with great Expedition. The Lambs alſo are hereby tempted to feed on the green Oats and Weeds; which being a freſh Bite, and a new Food, they will greedily eat, and meet with Plenty of Milk beſides. But theſe are not all the Advantages accruing from an early full Crop of green Oats; the Ewes, at the ſame time, will get themſelves forward in Fleſh, ſo as to fat the ſooner for Market after the Lambs are weaned off; or, if they are to be kept on longer as Store-ſheep, they will take Ram the ſooner, and be the better enabled to withſtand the Severity of a hard Winter. Now this great Improvement that is to be thus made by obtaining an early full Crop of green Oats, happens more ſurely to thoſe Farmers who dung their Land directly for an Oat-crop, and not for a Wheat-crop, as many obſerve to do in *Suffolk* and *Eſſex*, *&c.* to prevent Weeds and Smut happening to the Wheat-crop; for Oats ſown under this Management are not in danger of being hurt by Weeds, becauſe they may be fed off by Sheep and Lambs, as aforeſaid: And if they are not check'd this way, the Oat-crop in ſuch rich Ground will ſurely overcome, and keep down the Weeds: But, as there is a bad Property belonging to this Sort of Husbandry as well as a good one, I ſhall, in the next Place, endeavour to give ſome Account of the ſame, for the better preventing Perſons falling into the too common Miſtake of feeding a good and bad Crop of green Oats in one and the ſame Manner.

The great Diſadvantage that may attend feeding Ewes and Lambs on a bad Crop of green Oats, &c.— In this Account I am obliged to turn the Tables, and

and write of the great Loſs a Perſon is liable to ſuffer, who imprudently feeds his Ewes and Lambs on a poor Crop of green Oats. When Oats are ſown on a lean dry Soil, the Corn has enough to do, without any checking, to grow into a tolerable Crop, though a propitious Seaſon of Weather attends it: Wherefore, if a Farmer ſhould be ſo ſilly as to turn his Ewes and Lambs in here, to feed on the green Blades of Oats, it is ten to one odds, if he does not ruin his Crop by it; becauſe the Oat-roots in ſuch a barren Soil have not a Fund of Fertility to bring and puſh on a Regrowth of their Stalks and Blades, ſufficient to overcome the Weed, the Slug, or the potent Heat of the Sun, in a long dry Time; as has been the very Caſe of many ignorant Perſons, who, for want of Plenty of other green Meat at this Time of Year, have preſumed on the Aſſurance of a plentiful Crop of Oats, notwithſtanding they have fed them down in a poor Soil with their Ewes and Lambs; and ſo have brought themſelves under a Loſs of almoſt the whole Crop of Oats. This Caſe likewiſe affects thoſe Farmers who, having ſet on an Oat-crop in a clay or ſtiff loamy Soil, venture to feed their Ewes and Lambs on the green Blades, though the Weather be ſo wet as to cauſe them to tread and graum the Oats with their Feet, and thus do them more Damage than with their Teeth. Theſe are two extreme Pieces of ill Husbandry, which ought to be avoided by all prudent Farmers, leſt they ruin the greateſt Part of their Oat-crops. The beſt Way then is certainly to feed a Crop of green Oats with Sheep and Lambs, before the Stalks are high enough to be on the Spindle; and when Oats grow in a dry rich Earth, or when they grow in a ſtiff Soil, and are fed in dry Weather, while the Ground is in an hard Condition, there may abundance of Profit

be got by it, and yet do the Oat-crop more Good than Harm, provided the Ewes and Lambs are not kept too long in one and the ſame Field of green Oats; if they are, it may rather retard their thriving than forward it; for all Field-beaſts affect freſh Bites ſo much, that nothing pleaſes them better, nor cauſes them to thrive faſter, according to the old Maxim, *Change of Paſture makes the Calf fat.* It is therefore, that we carefully obſerve to take the Ewes and Lambs out of ſuch a Field of green Oats, before they have bit it down too low, and put them into another; and ſo ſhift them from Field to Field, as we perceive the Growth of the Crop, and the Dryneſs of the Ground, will admit. If it is a rich Ground, and a forward full Crop, ſeven Couples are enough to turn into a Four-acre Field of green Oats, as our uſual Stint is; then, if they are not kept here too long, the Lambs will thrive apace: But, of all Degrees of Growth, if the Oats are upon the Shoot, no Sheep nor Lambs ought to feed on them, leſt their Bite cauſe the Stalk to bleed, or run out its Sap; and then a good Oat-ear can never ſucceed. Again, if Oats grow thin, Ewes, with their Lambs, ought not to be turned into them at all; becauſe where green Meat is ſcarce, they will bite too cloſe down: And if wet Weather happen in the Time, they'll do Damage, as I ſaid, with their Feet.

Of fatting Lambs in fallow Fields.——This may be done with good Succeſs; but then the Ploughing-part muſt be let alone till late, even till the latter End of this Month; and where the Ground is not of the ſtiff Sort, it may anſwer well enough; but where the Land is of a clay or ſtiff loamy Nature, it is a dangerous Undertaking; becauſe, if a wet Summer ſucceeds, the Earth cannot be got into a fine Tilth againſt the next Wheat-ſowing Seaſon; and then the golden Crop is attended with a greater

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Riſque of ſpoiling than ordinary: But there are great Numbers of Graſs-lambs fatted this very Way on only the Graſs and Weeds that grow in incloſed arable Fields, in a moſt cheap Manner, and very early; for Weeds grow up apace: And by ſhifting the Couples in due time into freſh Bites, the Lambs will thrive at a great rate, if the Ground is not over-ſtock'd.

Of Weaning Lambs on green Oats.——Others reſerve their green Oat-crops purely for weaning their Lambs; for when they are taken from the Ewes, and turned in here, they will feed and pick out the Weeds, and will hardly meddle with the Oat-blades till they are gone; and then they will feed on the Oats, and fat faſt, if they are ſhifted into freſh Bites in time, and be thus got ready for Market, or for making Store-ſheep of them.

Of Weaning Lambs in Pea-fields.——This is ſo new an Undertaking, that few, very few, dare venture on doing it; becauſe they are afraid the Lambs will bite off the Heads of the Peas, and ſpoil their Crop. Thoſe that do this, ſhould be Occupiers of a dry Soil, ſuch as a Gravel, a Chalk, a ſandy Loam, or an intire dry Loam, that is kept in rich Heart, capable of puſhing forward the Growth of ſome Crops with great Expedition: And even then, but few Lambs muſt be turned in, after they have firſt had their Belly-full of Clover, or natural Glaſs, to prevent their falling-on and eating the Pea-heads; which they will be apt to do, if turned-in hungry; otherwiſe they will feed on and pick out the Weeds, before they will meddle with the Peas: But if they ſhould chance to bite off here-and-there an Head, they will grow again, and branch the more for being bitten a little, with this Caution, that Lambs ought not to be kept long enough in the Field to feed hard on the Pea-heads and Stalks, leſt they

venom

venom them, and cauſe the Loſs of ſo much of their Sap, as will weaken their Growth always after. If Lambs are to be weaned on young Pea-crops, they ſhould be of the Hog-ſort, and that are to ſtand till they are full ripe. It was the ſixth of *May* 1742, when our Pea-crop was fit to receive the weaned Lambs; but in ſome very warm, rich, dry Soils, Lambs were put in on the twenty-fourth Day of *April.*

Feeding and fatting Ewes and Lambs among Beans, &c.——This Piece of Husbandry is performed more in Vales, than in *Chelturne* Countries; becauſe they generally ſow far greater Quantities of Horſe-beans in the former than in the latter; which give the Farmers an Opportunity to feed their Ewes and Lambs among their Beans, from a very ſhort Growth to Bloſſoming-time: And, in ſome favourable, warm, wet Springs, they'll feed and fat on eating the Curlock-weed, the young Thiſtle, the Poppy, the wild Muſtard, the Chickweed, *&c.* and Graſs, notwithſtanding they are folded every Night; for, in moſt Parts of Vale-Lands, their Commons have ſo rich and fertile a Graſs Turf, as to fat their Beaſts ſurpriſingly faſt. Thus, with what their Ewes and Lambs find to eat between their large Crops of Beans, and on the fine hearty Graſs of their Commons, both Sheep and Lambs oftentimes become fat enough, and are ſold to the Butcher. It was the fifteenth Day of *May* 1744, before the *Ailsbury* Vale-Farmers ſuffered their Flocks of Sheep and Lambs to go into their Bean open Fields, to feed on the Weeds that grew amongſt them; for their Horſe-beans were not above three or four Inches high at this Day, by reaſon of this backward, cold Spring-ſeaſon.

Feeding and fatting Ewes and Lambs in Clover and Trefoil, &c. In this Month, Clover, Trefoil, and Ray-graſs, are in their greateſt Heart; and as their

their Stalks are large and very ſucculent, they yield abundance of rich Juice to ſuckling Ewes, that creates great Quantities of Milk in their Bags, which feeds and fats Lambs with the greateſt Expedition; and was it not for the dangerous hoving Quality that attends Clover-graſs in this Month, it would be the moſt profitable Sort of all artificial Graſſes. On this account, the ſuckling Ewe eſcapes better than the Ram and Wether; for theſe never have ſo ſoon as they; yet I can't ſay they are free from this Danger; becauſe, if due Care is not taken at firſt to give them their Belly-full of natural Graſs, juſt before they are turned into the Clover-graſs, it may likely become fatal to them. Now, to prevent this Misfortune, our moſt judicious Farmers ſow Trefoil amongſt their Clover; and ſome add Ray-graſs, which, in a very great Degree, ſecures the Sheep and Lambs from hoving: But where Trefoil grows in an intire Crop, the Ewes and Lambs feed in more Safety, and fat at a great rate; becauſe this Graſs yields a very pleaſant Juice, that produces an excellent Milk, and a great deal of it; inſomuch that both Ewes and Lambs will fat here faſter than in any other artificial Graſs, and become very ſweet Meat, provided they are put into the Field of Trefoil, while it is in its young Growth; for when this Graſs is old, its Stalks and yellow Bloſſoms get rankiſh, and tincture the Milk of the Ewe, and the Fleſh of the Lamb, with a little bitteriſh Taſte. This delicate Graſs-ſeed I ſow every Year in its black Hull, and not in naked Seed; for, in this Condition, it will keep ſound longeſt, either in or out of the Ground: Therefore thoſe who think fit to ſend to me for this Sort of Seed, ſhall have it ſent them in the Hull, and of the laſt Year's Growth.

Why Trefoil-ſeed is beſt ſent in its Hull to diſtant Parts.——Trefoil-ſeed may be ſent to great Diſtances in a pure ſound Condition, while it is in its black Coat or Hull, without the Danger of heating and ſpoiling; becauſe, in its Hull, it lies very hollow; inſomuch that we commonly ſow two Buſhels of it in its Hull on one Acre of Ground; when, if we ſow the Seed naked, we ſow twelve Pounds on one Acre. Thus a Five-buſhel Sack of Trefoil-ſeed, in its Hull, will be about equal to thirty or forty Pounds Weight of naked Seed: Which plainly ſhews the great Diſproportion of the Seed's lying in a Sack or Box, in its naked and hully Condition: Therefore, whoever has the naked Seed ſent them to a great Diſtance, is in Danger, by its cloſe lying, of having it heated and ſpoiled. And how much it concerns Perſons to get a right Sort of Graſs-ſeed, very much appears by St. Foyn-ſeed; which after one Year's Growth (though kept in its Hull) ſeldom grows; but there are ſeveral other good Properties belonging to the Trefoil-ſeed kept, and then ſown, in its black Hull; on which I have formerly written.

Of the Number of Ewes and Lambs, and the Time an Acre of Clover or Trefoil will fat the Lambs in.——This every Farmer ought well to conſider and know, before he turns in his Ewes and Lambs to graze and fat; for on a proper Management of theſe Graſſes, and that of the Ewes and Lambs, very much depends a great deal of his Intereſt. If he overſtocks the Graſs, he does himſelf a Damage; for theſe ſhould not be eat too cloſe down for the firſt time; if it is, and a dry Seaſon ſucceeds, it will greatly check its Growth: But if it is then fed down about half-way, there will be a ſufficient Shade left for lodging the Dews, and for recovering this firſt Bite in a little time. Here then lies great Part of a Farmer's Profit; if he

ſhifts

ſhifts his Ewes and Lambs out of one Field into another, or hurdles out a Piece of Graſs in the ſame Field, ſo that the Couples may enjoy a freſh Bite in due time, one Acre of Clover or Trefoil-graſs may feed ſix Ewes and Lambs, and fat the Lambs off in about ſix Weeks time; whereas, if this Number were to be kept on one Acre of Clover till it is eat up bare, it would backen their Fatting, and cauſe the Farmer to loſe the Benefit of moſt Part of his Graſs. Again, there is alſo this Difference attending this ſort of Management; one Acre of theſe Graſſes will fat ſix ſucking Lambs, if they are ſhifted in due time, as well as it would four ſucking Lambs, if they are fed on no other Graſs. As to what Mr. *Worlidge* mentions, relating to Weaning Lambs, in order to put their Dams Milk to another Uſe, is, I ſuppoſe, meant for making Cheeſe with the ſame; which they do in ſome Parts of *Wales*, where they ſtand or ſit behind the Sheep, to milk them. But this is practiſed in no Place in *England*, as I know of: For in this Part of *Great Britain*, Ewes Milk is put to no other Uſe than to ſuckle Houſe or Graſs-Lambs; which not only brings in the profitable Peny to the Farmer, but likewiſe affords the Nation in general a pleaſant Opportunity of enjoying their delicate Fleſh at a cheap rate in this Month, when it is in its greateſt Plenty.

CHAP. X.

Of Gelding Graſs-Lambs.

HOW Graſs-Lambs have been gelt in this month, and the Conſequences thereof.——In my former Works, I have written on this Article, how this is performed by drawing out the Stones with the

Teeth of a Man. But I ſhall here give another particular Account of gelding Lambs; *viz.* as to the Time of Gelding, it varies according to a Perſon's Conveniency and Fancy: For, firſt, ſome Farmers geld their Lambs as ſoon as the Ewe has done licking it, believing it to be the ſafeſt Way; becauſe the Creature ſuffers the leaſt Pain while the Strings of its Stones are ſmalleſt and tendereſt, and capable of Separation on a little pulling with the Teeth. Secondly, others refuſe to geld them ſo ſoon; alleging, when Lambs are juſt weaned, it commonly happens to be very cold, froſty, ſnowy, or wet Weather, in the ſhort Days, and long Nights; which expoſes theſe young Beaſts to the Severity of ſuch Weather, that oftentimes kills many of them ungelt, much more when they are, as being leſs able to bear it: Therefore, they ſtay till they are a Week old, which many think the beſt Age, of all others, to geld Lambs at for Safety. Thirdly, others again refuſe to geld them till *Eaſter*, let it fall ſooner or later; becauſe the Spring is by this time a little advanced, and a Picking of Graſs is now generally to be had in mild Weather, both on Commons and in Fields; which being an additional Feed to the Ewes Milk, it is the more Security againſt the Lambs ſtunting or dying by the Operation; for Gelding, at any time, brings the Lambs under an Hazard of their Lives, at leaſt a Checking of their Growth. Fourthly, others again will not geld theſe Lambs till *May*; becauſe then there is full Meat in the Field, and are, at this time of Year, grown almoſt to a Sheep's Bigneſs: But when this is the Caſe, the Caſtration muſt be performed by the common Gelder with his Claſping-irons, and by ſearing the Cod, at the Price of one Peny each Lamb. This Piece of Husbandry I have known done on the tenth Day of *May*. But I have this to add, by way

of

of Conſequence, that, for my own Part, I refuſe this Sort of Gelding by the common Cutter or Gelder, becauſe of the many fatal Effects that have ſucceeded ſuch Operation. A Neighbour of mine has had his Lambs gelded two or three Years together after this manner; but is now weary of it, becauſe he has loſt ſeveral Lambs by being gelded, late in *April* or *May*, with Claſping-irons; whence, notwithſtanding the Gelder's Application of a blue Powder and green Ointment to the ſeared Cod at the ſame time, ſeveral of his Lambs have died in the Years 1742 and 1743: So that, in this Caſe, neither a full Bite of Graſs, nor the Warmneſs of the Weather, could ſave them. Wherefore, I chuſe gelding Lambs, by firſt cutting off the Tip of the Cod, and drawing out their Stones with a Man's Teeth, at one, two, three, or four Weeks old: And then I immediately put in a little Hog's Lard or freſh Butter, or only ſome Salt, into the open Cod, and it is done with; beſides cutting, at the ſame time, a little Bit of the Lamb's Tail off: But then this Precaution ſhould be ſtrictly obſerved, that ſuch Sort of Drawing-gelding ought to be performed before the Buds of the White-thorn appear full, leſt the Lambs eat them, and get ſpotted on their Cods: Then, indeed, their Condition is too hazardous for them to be gelt by Teeth-drawing, as being more ſafe for the Creatures Lives to keep them on till *April*, or this Month of *May*, and geld them by Claſping-irons. However, let the Gelding be done at any time, the Lambs in very cold, or in very wet Weather, ſhould be houſed for the firſt Night or two afterwards.

CHAP. XI.

Of Weeding in May.

A farther Account of Weeds and Weeding, than what I have heretofore publiſhed.

HOW a Wheat-crop was weeded, while in its green Ear.—I have formerly written much on weeding Corn; but, for all that, I doubt not but there are many Secrets behind, that are not yet come to my Knowlege. The latter End of this Month they were weeding Wheat Knee-high, when Part of it was ſhooting out its green Ear. A Perſon, going through one of their Fields in *Nottinghamſhire*, asked the Weeders why they trod down the Wheat while it was ſo high; but they made a Piſh at it, and ſaid, it would riſe again by-and-by. But, by-the-by, theſe were a ſort of wretched Husbandmen, that defer weeding their Wheat till it is on the Shoot; for although it has a Chance of riſing again, if fair Weather ſucceed, yet the Bruiſing of the green Stalks by the Weeders Feet checks the free Aſcent of the Sap, and greatly damages the Crop; which is what moſt of theſe Peaſant-People have no Notion of: Beſides, if rainy Weather, for ſome time, ſhould happen to follow ſuch Weeding, the trod-down Stalks would, many of them, be apt to remain to the laſt in ſuch a couchant Condition; and then there would be a fine deal ſpoiled indeed! Therefore, I think, the Farmer, whoſe chiefeſt Intereſt depends on his Wheat-crop, ſhould be Maſter of more Wit and Conduct, and prevent ſuch great Prejudice, that muſt certainly happen by Weeding, when Wheat is in its green Ear.

How a Wheat and Barley-crop was ſpoiled by Weeds, &c.——On the Third of *July* 1743. I had ſome Sheep ſtrayed from the reſt of my Flock on *Gaddeſden* Common; upon which I ſent my Servant in Search of them, who travelled ſome Miles before he found them. In his Way, he told me, he met with a diſmal Sight, even that of a very poor Wheat and Barley-crop, that grew on a dry husky Chalk and Gravel. Here it was, that great Quantities of thoſe pernicious Weeds grew, called Clap-weed and Poppy-weed: The firſt bears a white Bloſſom, and branches out in great Numbers of Stalks, draws a great deal of the Ground's Goodneſs to maintain its Growth, and takes up much Room, to the killing of the Corn that grows near it: The red Poppy likewiſe is as bad a Weed as this, becauſe it has the ſame fatal Effects; ſo that both theſe Weeds (notwithſtanding the Uſe of the common Weed Hand-hook, employed in *May*, to check their Growth) have ſuch deep Poſſeſſion of the Ground, as to become rampant by this time, and do a great deal of Miſchief both to Wheat and Barley-crops, in theſe ſort of dry Soils; inſomuch that, what with the Effects of a long dry Spring-time (for it had not rained for ſeveral Months, till the Beginning of *June*), and the furious Growth of theſe two Weeds, that got the Dominion of the Corn, the Farmer-Owner had hardly any good Grain this Year, except Peas; and theſe were, almoſt every where, a full Crop; while in Vales, and in moſt Parts of *Chelturne* Countries, there was the beſt of Wheat and Barley; for theſe were ſo plenty, that Wheat ſold, till *May-day*, for leſs than three Shillings a Buſhel, and Barley for leſs than two. Now, here there are no leſs than three ſeveral great Farmers, that live almoſt together, moſt of whoſe Land is of a chalky and gravelly Nature, and ſubject, in very dry

dry Summers, to this Misfortune; and the more, as the Weeds get old and more numerous: And this they do, becauſe their common Two-wheel Plough is not capable of extirpating all the Roots of Weeds; which, with the Hand Weeding-hook, is all they have to truſt to, for deſtroying their Weeds. This leads me to obſerve, how wanting theſe three Farmers are to their own Intereſt, who, though they are juſtly accounted ſome of the beſt of Farmers in the Country they live in, for managing after the old *Virgilian* Way of Farming; yet ſo ſhort are they of the main Point, as to be very great Loſers, in very dry Summers, by their Wheat and Barley-crops being thus damaged by Weeds; which may be moſt eaſily prevented by the Uſe of the Three-wheel Drill-plough, Horſe-break, and *Dutch* Hoe; by the Drill-plough ſowing the Wheat and Barley-ſeed in Drills at a Foot aſunder, and hoed once or twice afterwards by the diſpatching *Dutch* hollow Hoe, which excellently well performs a great deal of Weeding-work in one Day by a Man's Hand; or by ſowing Wheat or Barley out of the Hopper of this moſt valuable Plough, without any Hoeing at all for the reſt of the Year, by a particular Method I informed all thoſe of, that I furniſh this Drill-plough, Horſe-break, and *Dutch* Hoe to; which are Inſtruments that deſtroy all Sorts of Weeds in the cheapeſt manner poſſible; and, by this means, will ſo nouriſh a Wheat or Barley-crop, in the drieſt Seaſons, in chalky, gravelly, and ſandy loamy Grounds, that there is no great Hazard of the Farmer's having full Crops of Wheat and Barley in them. By this very Caſe, I take the Opportunity of touching upon the obſtinate Ignorance of ſome Farmers, and the great Advantage they miſs of, in not adhering to and practiſing thoſe Improvements that might be moſt plainly made appear to the Capacity

of

of a mean reaſonable Ruſtick. The obſtinate Ignorance of ſome, if not moſt Farmers, is ſo well known to moſt Gentlemen Landlords, that to them there needs no Information how Antiquity and Cuſtom govern their Actions, and prevent their embracing any new Improvement in Husbandry; though it would certainly be to their very great Advantage, even to the Saving of ſome from Breaking and Ruin: Witneſs the preſent Caſe, which plainly ſhews, that if a poor Tenant had nothing but his Corn-crop to truſt to for paying his Rent, in ſo cheap a Year as this was, 1743. when Wheat, as I ſaid, ſold for two Shillings and Six-pence a Buſhel at *Hemſtead* great Market, and Barley for leſs than two Shillings, how muſt he be able to remain in his Farm, and have no more than five Buſhels of Wheat upon each Acre, as my Man verily believed was the outſide Quantity that grew in an Eight-acre chalky Field of this Farmer's, notwithſtanding he plowed and dreſſed his Ground in Perfection before he ſowed his Wheat-ſeed? For I know this Farmer is never wanting in performing theſe two main Branches, which occaſions him in wet Years to have plentiful Corn-crops; but, in very dry ones, the Manure, or Dreſſing, is apt to do more Harm than Good, pecially if Soot, or other of the powder'd Sorts, are laid on the Wheat late in the Spring-time; for then it helps to burn up rather than aſſiſt the Corn-crop; which Damage, added to that of the rampant Weeds, whoſe fertile Growth, in ſuch dry Soils and Seaſons, being little or nothing impeded by the Corn-crop, have the greater Power to rally and keep down the Thriving of the Wheat; whereas, if ſuch a Farmer was but to break his Pea-crop, that is, if he would only ſow his Peas in Drills, and draw the new-improved Horſe-break through the Interſpaces one or twice in a Summer,

this

this moſt excellent Inſtrument (if it is made in right Order, with the late additional earthen Iron) would deſtroy the moſt potent Weed that grows, and, by this very means, prevent Wheat and Barley-crops from being afterwards damnified by their Arch-Enemy the Weeds.

CHAP. XII.

Of the Polype Water-animal, and other Inſects; with Accounts relating to their wonderful Properties.

AN Advertiſement printed in the Northampton Mercury *in* November 1742.——"From the "Paris A-la main, *November* 22. 1742. The third "Memorial that Monſieur *De Reaumur* read the "13th Inſtant, at the Royal Academy of Sciences, "relates to a very curious Diſcovery that has been "made at the *Hague*, by Mr. *Tremblay*. It is an "aquatick Inſect, called a Polype, which has "this Peculiarity in it, that, when it is cut into "ſeveral Parts, each of thoſe Parts produces of "itſelf, in the Space of twenty-four Hours, what "it wants to form a complete Body; ſo that this "Inſect being cut tranſverſely in three Parts, the "Part belonging to the Head will produce a Tail, "and the Tail a Head, and the Middle a Head "and Tail. Some of theſe Inſects have even been "cut tranſverſely into forty Parts, which each "produced what was wanting in it to make a per-"fect Inſect; ſo that of one Polype, perhaps, "forty were made. If they be cut through the "Middle, from Head to Tail, each will produce "another. On this Occaſion, Monſieur *de Reau-*"*mur* made ſeveral learned and judicious Obſer-

"vations;

" vations; particularly, that as it is an Axiom, " that Nature is not ſingular in its Productions, " ſo there muſt be other Inſects ſuſceptible of the " like wonderful Productions. He reports, that, " by Experiments already made by him, he has " diſcover'd certain Earth-worms that have the " ſame Properties; but that Nature operates in " them in a much longer Space of Time."

Of the great Importance of knowing the Nature of Water-inſects. —— Although this Knowlege highly concerns Gentlemen, Farmers, and others who live in the Country, and keep Cattle; yet it has been ſo little taken notice of by ruſtic Authors, that, I preſume, few Perſons have regarded it to any Purpoſe: And therefore I thought a more ample Diſcourſe of this Nature ſo perfectly neceſſary to employ my Pen in, that I could not diſpenſe with an Omiſſion of it, conſidering the infinite Damage that Beaſts are liable to, which have no other Water to drink throughout the hotteſt and drieſt Summer than that of ſtagnating Ponds and Ditches; or when, through a cuſtomary Miſtake, Perſons prefer ſuch naſty unwholſome Water to that of a River or Well-ſort, when it is in their Power, at the ſame time, to chuſe the latter, and refuſe the former. But, before I come to treat of the dangerous Qualities of ſuch Pond and Ditch-waters, and of the Animals and Inſects that breed and live therein, I ſhall firſt give an Account of the Nature of the Polype Water-animal, whoſe late Diſcovery, by the celebrated Mr. *Trembley* at the *Hague*, by Mr. *Reaumur* at *Paris*, and by *Martin Folkes*, Eſquire, Preſident of the Royal Society, and Mr. *Baker*, at *London*, has ſurpriſed all that hear and read of it; becauſe it proves to be of a Nature contrary to the common Courſe of Nature, and the received Opinions of animal Life, to a Degree that People, as the learned Mr. *Baker* ob-

ſerves, look on the Natural Hiſtory of it as ridiculous Whims, and abſurd Impoſſibilities: Yet the plain and repeated Experiments that have been viſibly made of the Polype, before many curious Gentlemen, Virtuoſos of the Age, have ſufficiently evinced the Reality of what Mr. *Baker* has made Trials of; and wrote the ſame in his Treatiſe, intituled, *An Attempt towards a Natural Hiſtory of the Polype*; printed in the Year 1743: Which leads me to make ſome Obſervations of the ſame.

A particular Account of the Nature of the Polype. —— Mr. *Baker*, in this his Treatiſe, remarks, that that curious Obſerver of Nature, Mr. *Leeuwenhoeck* firſt took notice of this Water-animal, and the uncommon Way its young ones are produced, in the Year 1703. But the amazing Properties of it were more fully found out by the ſaid Mr. *Trembley* in 1739. who diſcovered it to have a greedy voracious Appetite, and a ſingular Dexterity in catching, maſtering, and devouring Inſects and Worms, though much larger and ſtronger than itſelf; ſince which, by Mr. *Baker*'s cutting Polypes into Parts, ſeveral Hundreds have been produced in *London* between *March* and *Auguſt*, by three that were ſent over to *London*. But, beſides theſe three *Dutch* Polypes, there have been ſix *Engliſh* ones found ſince in a Pond at *Hackney*, and ſeven or eight ſmaller greeniſh ones in *Eſſex*. Of theſe Polypes there are ſeveral Species, that render themſelves ten or twelve times longer at one time than another; for this, Worm-like, can contract or extend its Body at Pleaſure, by faſtening the End of its Tail to the Bottom or Side of any Veſſel it is kept in, or to the Stalk or Root of Duck or other Weeds in Ponds or Ditches; from whence it generally ſtretches out its Body downwards; and ſometimes crawls, by the Aſſiſtance of ſix, eight, ten, twelve, or fourteen Horns, or white Arms, no

thicker than the Threads of a Cobweb, that incircle its Head, with which he feels for, and takes his Prey; for the Virtuoſos, with the niceſt Microſcopes, cannot find it has any Eyes; but ſome with ſo ſhort a Body, when extended, as hardly to exceed a Quarter of an Inch in Length; and ſo little, when fully at Length, that it may be compared to the Thickneſs of a Hog's Briſtle; as theſe were, that were taken in *Eſſex*. Others, that were firſt ſent over by Mr. *Trembley*, had Bodies an Inch and an half long, when extended, tho', when contracted, not exceeding one Tenth of an Inch: And yet the *Hackney* and *Eſſex* ones were ſmaller at firſt taking than theſe. But thoſe laſt ſent over by that Gentlemen in *July* with Tails, though their Bodies were no longer nor larger than thoſe of the other Species, yet had Arms that ſurpriſingly extended to ſeveral Inches. The Number of Foreign Polypes Arms are commonly from eight to fourteen; the *Engliſh* ones from four to ten. The firſt ſort have been ſeen to extend their Arms nine or ten Inches deep in a Glaſs Jar of Water; and the laſt three or four Inches; which they row and wave about in Ponds and Ditches for making a circular Motion to form a Current, that ſometimes brings along with it many ſmall Inſects, which they catch and prey on. Some Polypes have been ſeen to ſhorten their extended Bodies, not groſſer in that Condition than the ſmalleſt Straw, to the Thickneſs of a Gooſe-quill, and to the Shortneſs of a Quarter of an Inch, in one Moment's time. But ſuch large Polypes are ſaid to be very rare; for that they are ſeldom ſeen above an Inch long in their longeſt State; and then, as I ſaid, no bigger than a Hog's Briſtle. Theſe ſmall freſh-water Animals have been brought over to *England* in Phials of Water ſtopt with Corks, and afterwards

kept in open round Glaſſes of ſoft Water a long time, by feeding them with Worms, and taking the Polypes out with a Quill-ſcoop every ſecond Day, for renewing the Water, and cleaning the Glaſſes; otherwiſe the Excrement that they void, the groſs Parts upwards, and the fine Parts downwards, would form a ſlimy Sediment, and may become fatal to them. Here they will live, and feed three times a Day, or without Food for ſome Weeks or Months; and may be ſeen in their many different Poſtures, how they fix their Tail to the Side of the Glaſs, and extend their Bodies to ſeize a Worm, which can hardly eſcape, if the Polype does but touch him; for then it is immediately graſped with his long Arms; for he is Maſter of ſuch an exquiſite Senſe of Feeling, that if a Worm touches the leaſt outward Part of his Arms, he ſeizes it with as much Fury as a Cat does a Mouſe, and ſoon entangles it to its Deſtruction; for tho' the Worm is far larger, and ſeemingly ſtronger, than the Polype, yet, as Mr. *Baker* obſerves, he is quickly killed and preſently eaten by him; which Sight affords a fine Entertainment, to behold the Dexterity of the Polype in maſtering its Prey, and the Art with which it evades and overcomes the greater Strength and Agility of the Worm. Theſe Polypes may be found in many Ponds and Dithes in *England*: And, for finding them, Stones, Sticks, Stalks, and Roots of Water-plants, or any other Thing lying below the Top of the Water, if tenderly taken out, and put into large Glaſſes of Water, and there be any Polypes among them, they may be ſeen hanging by their Tails, Leech-like, in a gentle Motion of their Bodies; for as theſe are little or no Swimmers, they are ſeldom looſe in the Water, and therefore are not eaſily found by taking up clear Water in a Pail or Bowl; yet they

they ſometimes crawl to, and hang by their Arms on the Top of the Water with their Tails downward; and ſometimes lie at Length on the Top of the Water, in order, as it is ſuppoſed, to catch ſome Prey, particularly in Ditches, for taking ſome Sort of Flies and Inſects. The Polypes, ſays this ingenious Author, produce their Young different from the common Way of all other Creatures yet known; for, having no Diſtinction of Sex, every one of them is prolific, as much when apart as when in Company. The young ones come out of their Parents Side, not bigger than a Pin's Point; and in a Day or two put out Arms; and in time ſeparate from it: Four or five at a time drop from the old one's Body, and then others ſucceed; and, what is very ſtrange, the young ones frequently breed others, and theſe others again, to the Re-production of a third or fourth Generation, before the firſt parts from its original Parent; and thus are found to be of ſuch an increaſing Nature, that, as this Gentleman obſerves, a thouſand may be bred from one Polype in a Summer. But the moſt wonderful Part of all is, if the Head Part of a Polype is cut off croſs-ways, it will ſeize a Worm as ſoon as offered it; and it has ſwallowed as much as the Piece of Body can contain; and in one Hour's time play'd its Arms, and in a few Days produced a Tail. A Polype cut acroſs in three Pieces with a Pair of Scizzars, as it lay in a little Water on a Sheet of Paper, and immediately put into a Glaſs of Water: In eight Days time they have recovered themſelves, and been three diſtinct complete Polypes, though the middle Part, at cutting off, was no bigger than a midling Pin's Head. And, what is likewiſe extraordinary wonderful of this Creature, Mr. *Baker* gives an Account of a large Polype, that was turned inſide

inſide out, by his firſt diſtending its Body with a larger Worm, given it for the Purpoſe, than it could ſwallow; which with the Head-part of a Pin (the Point whereof was ſtuck in a ſmall Stick) he puſhed the Tail inwards, that cauſed all the Worm to come out of the Polype's Mouth; and yet the Polype lived. He ſays, Mr. *Trembley* has turned many, which yet lived, thrived, and produced many young ones in that inverted State. There are Hundreds of other curious Matters relating to this ſmall Water-animal, with numerous Cuts, contained in Mr. *Baker*'s Four-ſhillings bound Book; which, he ſays, he wrote to vindicate the Truth of them, as having proved divers of them by viſible Experiments; and to diſplay before Mankind a new Inſtance of the amazing Power of the Creator. But, he ſays, there are ſome Perſons, who, though real Facts are inconteſtable Arguments, ſometimes disbelieve even what they ſee. Others, ſays he, there are, who, though convinced of Facts, remain diſſatisfied; unleſs all the Steps whereby thoſe Facts are brought about, can be mechanically deſcribed, and a Reaſon aſſigned for them. Hence it comes to paſs, ſays he, that ſome, who have been Eye-witneſſes of the Cutting and Re-production of theſe Creatures, and have no Doubt at all remaining, as to the Reality of what has been related concerning them, are yet frequently inquiring how their wonderful Faculties can be accounted for, and wherefore they are beſtowed on this Animal. To which Mr. *Baker* anſwers —— No otherwiſe, in my Opinion, than by reſolving them into the Will and Pleaſure of their Almighty Creator; which I likewiſe believe the moſt reaſonable Way of accounting for the Qualities and Properties of moſt other Things around us. When a Twig is cut off, and by planting in the Earth becomes

becomes a Tree of the Kind whereof it was a Part; Can we account for its becoming ſo, any thing better than we can for the like Effect in a Polype? A Cutting of a Vine, Curran, Elder, Arbel, Poplar, Willow, or Alder? Will not their Boughs, or Pieces of them, grow, if ſtuck in a proper Earth at a proper Seaſon? *&c.*

Of the poiſonous Nature of the Polype, and other Water-inſects; and of the Waters they breed and live in. — As there are many Sorts of ſmall Water-animals and Inſects, that breed and conſtantly live in Ponds and Ditches, whoſe ſeveral Natures (it is ſuppoſed) vary according to their different Species; it would be very ſatisfactory, and I believe very ſerviceable to Thouſands, if their good and bad Properties could be diſcovered, that Perſons may thereby be the more induced to avoid the worſer Sort of them; for at preſent, few, very few of the Farmers in particular, will entertain hardly any Notion of the Prejudices that may happen to their Cattle by drinking black, foul, and muddy Waters, nor of the many Sorts of Inſects they abound with, which their Horſes, Cows, Swine, *&c.* very probably ſwallow at their watering; till they are made ſenſible of their miſchievous Natures by the moſt glaring Proofs; for, till then, they will not be diſpoſſeſſed of their antient tenacious Opinion, that ſuch Water is preferable to all others for this Uſe: Becauſe, ſay they, this foul Water is of a warmiſh and nouriſhing Nature, by means of the unctuous and ſulphureous Qualities of the Dung and Urine that are waſhed into it by the frequent Fall of Rains, that thus deliver the Cattle from the Danger of Gripes and Belly-ach, which clearer Water (the Spring Sort eſpecially) may ſubject them to; and likewiſe, becauſe ſuch Water lies neareſt the Farm Yard,

Yard, thatconſequently makes it leſs troubleſome to come at, than a clearer Sort in a Pond, ſituated at a greater Diſtance ; without conſidering the worſer Part of ſuch ſtagnating foul Water, and that of the Inſects they are furniſhed with. In order therefore to make my Endeavours tend towards removing this grand, and ſometimes fatal Miſtake, I ſhall here give a ſhort Account of what this nice Virtuoſo Mr. *Baker* remarks, relating to the venomous Nature of this little Water-animal, the Polype ; who, at Page 32. has theſe Words. — "We ſhall never, perhaps, be able to diſcover cer- "tainly, by ocular Demonſtration, whether the "Mouth of this Creature is really armed with "Teeth ; but we may conjecture it ſo to be, from "the Eaſe wherewith it bites or breaks the Skin "of a Worm, in order to ſuck the Blood and "Juices ; as, if the Worm be large, it is con- "ſtantly found to do, till the Body is reduced "to a Size capable of being ſwallowed. There "is, likewiſe, a further Probability of its having "ſuch offenſive Weapons, from the violent and "painful Agonies a Worm expreſſes the Moment "it is taken Hold on by the Polype's Snout, and "from the ſudden Death that follows ; which, "conſidering the Nature of a Worm, and the "Difficulty of killing it by pricking it, or even "cutting it in Pieces, would almoſt incline one "to imagine, there muſt be ſomething poiſonous "in the Bite ; and that the Polype, as well as the "Viper, does not only bite, but even inject a "Venom into the Wound it gives, for the more "ſpeedy Deſtruction of its Prey." Which Kind of Death to the Worm is ſomewhat analogous to that of a Toad and a Bee ; when a Spider kills the former leiſurely, if he cannot enjoy his Plantane Antidote ; and the latter ſuddenly : For, as ſoon as a large Humble-bee is intangled in a Web,

Web, I have ſeen a Spider directly march towards him, and, ſeemingly, by putting his Mouth to the Bee's Mouth, preſently enſued its Death; which, I ſuppoſe, was occaſioned by the Spider's injecting a Poiſon into the Bee: For, as Mr. *Baker* obſerves, we have no way of coming at the inviſible Cauſes of Things, but by arguing from their viſible Effects. But, to return to the Water-inſects: On the 20th Day of *February* 1743-4. I ſent my Servant to my Neighbours Ponds for Water, to diſcover what Inſects I could in it; and from a little Pond, where there was little Water, I perceived in a Glaſs of it, many live Creatures, that appeared to the natural Eye as big as very large Lice, and moſtly of their Shape, with very white Bodies, and a bright red Liſt along their Backs: Theſe ſwam by the Help of four ſhort Horns or Arms, commonly in an aſcending Manner; except when they had ſtruck out their Arms on each Side their Head, they deſcended a little, till they recovered by another ſhooting out of them, and then aſcended again; which Motion they ſeeemed to continue without much Fatigue. In a larger Pond on the ſame Day, I perceived none of theſe white Lice-inſects, but three other Sorts. One appeared, by my Microſcope, to be as big as a Thetch, with a divided Tail in two flat Parts, which helped it to jet about in a Spoonful of Water with great Agility, and of a black Colour, but I ſaw no Legs or Arms that it had; and in the ſame Spoonful of Water a much ſmaller Inſect preſented itſelf, ſwimming about like a Pin's Head in Bigneſs. In another ... Quantity ... from this laſt Pond, I was very much ſurpriſed at the Sight of a ſlender Inſect, whoſe natural Length, as it ſwam in a Phial of Water, ſeemed one Inch; had an Head and Tail like an Adder, with a Body of a white, ſhining, tranſ-

parent Colour, the Bigneſs of a ſmall Straw, and compoſed of about ten Joints without any Legs, which helped it to twine about like a Worm or Adder, and would contract and extend itſelf like them. This Inſect had a Pair of Eyes viſible to the natural Eye of a Beholder without a Glaſs, appearing like two ſmall black Specks; which were the more apparent, as his Head and Body looked of a whitiſh Colour: And I obſerved, that there was a little black Bunch on his Back near his Head, and another near his Tail. This Water-adder Inſect (for ſo I call it) I took out of the Water, and laid it on a Piece of white Paper; where, in leſs than fifteen Minutes, it expired; putting out, as it had done before, its black Tongue, like a Hair; and another ſmall Thing at its Tail, like the Sting of a Waſp. This Animal I kept alive in the Phial ten Days, by ſhifting the Water once in three or four, without giving it any Food. In the ſame Phial of Water another ſmaller Animal appeared, of a perfect brown Colour; in Length ſomething above a Quarter of an Inch, with a Body about the Thickneſs of a ſmall Straw, and a taper Tail, that had three little Hairs, or Forks, at its End, which it ſpread in Swimming, with a quick playing Motion; as it did its whole Body up and down in the Water by the Help of many Legs, and two Hairs or Arms at the Front of its Head. This Animal being thus furniſhed with Arms, Tails, and Feet, to a Body compoſed, like a Caterpiller, of many Joints, gives me a Suſpicion it is of the amphibious Kind, becauſe it is well provided for either Swimming or Crawling. On the 27th Day of *February* 1743. I ſhewed it to ſome Perſons; who, when they beheld it in the Phial of Water with the naked Eye, declared themſelves frighted and amazed at its Sight; as not

ſuſpecting

ſuſpecting there could be any ſuch Animals bred and living in the ſame Water they daily uſed for their Tea, for boiling their Meat, for Brewing, and for watering their Cattle. Red-worms, Frog-ſpawn, Tadpoles, Water-lice, and many other living *Animalcula*, are obvious to the View of thoſe who are at the Pains to ſtrain their Pond and Ditch-waters through a Sieve; which moſt of the Inhabitants at *Gaddeſden* are forced to do in Defence of our Health, in dry, hot Summers, and, indeed, all the Year beſides, when our Ponds and Ditches are low in Water, as they were in 1743. But the former Sort of Animals being not ſo commonly found in the Water as theſe latter Sort are, they are overlooked by moſt People, and taken little or no Notice of. However, there are others, who are ſo much their own Friends, as to carry their Suſpicion of the poiſonous Nature of theſe Water-inſects ſo far, as to uſe none of the Water for their Tea, or Fleſh, before they ſtrain it through a Cloth; as not truſting to the Detention of them by a Sieve, fearing its woven Hairs lie at too great a Diſtance to prevent the minuteſt of them making their Eſcape into the ſtrained Water; which, notwithſtanding all our Care and Pains to get clear and fine, muſt, in courſe, in ſome Degree, partake of the filthy Nature of the Mud and Sediments of the Pond, beſides being tinctured with the dead and living Inſects, and with their Spawn or Eggs, ſo as to render the Water unwholſome, if it is not firſt boiled, and carefully ſcummed; and this the more, as the Water becomes leſs in Quantity; for then undoubtedly it is moſt diſturbed by theſe Inſects, that lie in and upon the muddy Part of it. But, in my next Supplement for *June*, I intend to give a further Account of this important Affair, becauſe it is a Matter of very high Conſequence,

as it concerns the Health of Men and Beasts; and therein make known a Remedy for this great Evil, by the Application of a certain Ingredient that will infallibly kill all Sorts of Water-animals, and yet not damage the Water.

An Account of the Death of a Colt, supposed to be occasioned by constantly drinking at a Pond of foul Water, that abounded with infinite Numbers of Water-animals and Insects.——Now, although it cannot be certainly inferred from what I have before remarked, that the Polype, nor other Water-animals and Insects are of such a poisonous Nature, as to cause the Death of Beasts which are constantly watered at the Ponds and Ditches where they breed and harbour; yet, in my humble Opinion, they afford us a strong Suspicion of it: And why common Instances of their Mischief are not more seen, may be for the following Reasons: First, where Pond or Ditch-waters are, by contiguous, declining, clean Situations, presently increased by Showers of Rain: Or, where such Waters are in large Quantities, and much exposed to the purifying Virtues of the Air: Or, where they are fed by Springs: Or, are often emptied: Then, I say, this Damage is much prevented. But, where foul or blackish-coloured Pond or Ditch-waters are reduced by long Draughts, and their Water-animals and Insects are thereby comprised in a very narrow Compass, they are consequently more exposed to be swallowed by Cattle (the larger Sort especially) that drink no other Water; for then Multitudes of them, by means of their narrow Confinement, are necessarily convey'd or suck'd into the Bodies of Horses, Cows, and Swine, at their Watering or Drinking, for want of Room to avoid it, with some filthy Slime, that must accompany these Water-animals or Insects, and living *Animalcula*; because they lie in or upon the

the Mud, as well as float and ſwim up and down in the Water. Which brings me to my intended Purpoſe of giving ſome Account of the Death of a Farmer's Colt —— A Colt, that at two Years old coſt Mr. ———, who lives about a Mile diſtant from my Houſe, ten Pounds at *Dunſtable* Fair in *Bedfordſhire*; and ſeemed to promiſe well for making an Horſe worth twenty Pounds a Year or two hence: But this Hope was prevented by the Colt's ſickening and dying on the Day after *Chriſtmas* Day 1743. that happened in this Manner: It was taken ill about the tenth Day of *December*, for which it was blooded, and Drinks given it by two ſeveral Farriers; which occaſioned him to look livelier at ſome times than at others; but he drooped all the while, and went off his Meat by degrees; ſo that he lingered about a Fortnight, or more, between Hope and Deſpair, and latterly ſeemed ſtupefied, as if under a lethargic Diſtemper; would now-and-then reel a little; and, at laſt, ended his Life in a ſort of ſhriveling, or gathering-up Poſture of his Body. When opened, the Man that did it told me, nothing could be diſcerned extraordinary of this Colt's Death; which employed the Thoughts of ſeveral, how it came to paſs; but none were able to make a concluſive Conjecture. For my Part, as I am a near Neighbour and Acquaintance of this Farmer's, I gave my Opinion (though no Farrier), that it was occaſioned by watering this Colt daily at a Pond ſituated at the Bottom of the Farm Yard, which lay on a ſharp Deſcent, where Part of the Strength of the Dung and Piſs of the Farmer's ſix Horſes, his Cows, his Swine, his Sheep, and the Drain of his Dwelling and Out-houſes beſides, waſhed and run into it, that kept it all the Year under a greeniſh or black Colour, and in a very ſtagnating,

nating, and ſometimes ſtinking Condition; and this more now than has been for many Years paſt; becauſe the Springs were hardly ever known lower, by the laſt three Years dry Weather, than at this Time; which has cauſed even the Well-waters in many Places to be ſo low, that little could be got; and, therefore, ſome that uſed to water their Cattle from what they drew out of Wells, were now obliged to water them at corrupted Ponds and Ditches, ſo ſtored with Animals and Inſects, that they ſeemed as thick as Oatmeal in Pottage. But this Farmer's Caſe was otherwiſe; he did it by Choice, though he had an excellent chalky Well-water at Command in a low Situation juſt by the ſame Yard, and accordingly conſtantly obliged the Colt to drink of this foul Water to the laſt, which at this time was computed to be two Feet deep, and the Mud under it as much; ſo that this Pond, in courſe, was become a poiſonous Nurſery for the Breed and Harbour of Water-animals, and *Animalcula* of the worſer Sort, that were neceſſarily, as I ſaid, in ſome degree, ſucked in by the Cattle at their Drinking: And although theſe Water-animals and *Animalcula* may be killed by the digeſtve Faculty and Heat of the Creature's Stomach, yet, who knows what Quantity of venomous Matter may be thereby conveyed into the Blood of the Beaſt, or what Damage it may do afterwards? For, if I miſtake not, moſt Poiſons are of an acid Quality; and, if Water-inſects are of the ſame Nature, they may poſſibly cauſe a Coagulation of the Blood of an Horſe that drinks them into his Body; and That, a Stoppage of the Blood's Circulation; which may bring on a lethargic Quality, and kill the Creature: For, undoubtedly, if thoſe Inſects are of a venomous Nature (which it behoves one nicely to examine), they muſt neceſſarily be of great

great Prejudice to the Creatures that take them into their Bodies in common Draughts (notwithſtanding it is manifeſt, that the Heat of the Stomach preſently kills them); becauſe they muſt more or leſs contaminate the Maſs of Blood, by their poiſonous Quality affecting and loading the Juices deſtined for Nouriſhment. But then we ſhould take care to ground our Hypotheſis upon a true Baſis; elſe all our Argumentation thereupon muſt be Fallacy. Therefore I could heartily wiſh, that the learned Virtuoſos of the Age, who are Maſters of the beſt of Microſcopes, and other Conveniencies, would ſtrenuouſly employ their Curioſity in ſearching more into the Nature of theſe Water-animals and Inſects; and endeavour to find out, whether they may communicate a poiſonous Quality to the Blood of thoſe Beaſts, that may ſuck and drink them into their Bodies; for I am ſure the Water is ſuch, when it is in a ſtagnating, ſtinking Condition, as I am going to make further Obſervations of.

A further Account of the ill Effects of ſtagnating Ponds and Ditch-waters, and the Inſects they abound with. —— Preſently after the Death of this Farmer's Colt, two of his other Horſes were taken ill, that had been daily watered at this ſtagnating Pond-water; but it had not that fatal Effect on them as it had on the Colt; for theſe two, with ſuitable Applications, recovered; perhaps, becauſe theſe two Horſes being arrived to a greater Age than the Colt, their Bodies were more capable of reſiſting the poiſonous Quality of the Water and its Inſects. However, by theſe repeated Examples, the Farmer at laſt (as he owned to me) became of Opinion, that this Damage had its Riſe intirely from the Horſe's drinking at this naſty Pond; and therefore ever ſince has watered all his Horſes with Water that is daily

drawn out of his Well: A Remedy better late than never; and which hardly any thing elſe but the Death and Sickneſs of his Horſes could have perſuaded him to make uſe of, and to overcome that old grand riveted Notion, that there can be no Harm in that Water, where Cattle have daily drank for many Years together without Prejudice. Therefore it is, that Cuſtom carries it over Reaſon, and induces Thouſands to believe their Cattle are always in Safety, in reſpect of their drinking at Ponds, let the Water be in what Condition it will, ſo there be enough of it: But as this Year 1744. is (if I miſtake not) a fourth ſucceſſive dry Year, the Caſe is altered; becauſe the Mildneſs of their Seaſons occaſioned not only great Scarcity of Water in moſt Places, but thereby ſtagnated it, and qualified it the more to breed pernicious Inſects, that ſtill multiplied, and inlarged their Growth; till moſt Ponds and Ditches were ſtored with them to that Degree, as obliged the larger Sort of Beaſts to ſwallow many of them at their Drinking. Hence it is, that it highly concerns all Perſons who graze and keep Cattle, to be more than ordinary careful to provide themſelves with a good Well, or large Ponds of Water, with ſuch Aqueducts, as may quickly convey to them the wholſome refreſhing Waters of Springs and Rains; for ſmall Ponds and Ditches, eſpecially of ſtanding Waters, are very liable to be full of Inſects in Summer-time, and, indeed, all the Year beſides in mild Seaſons; and then they are certainly unwholſome in the time they are moſtly wanted. It is recorded, that the Drought of the Summer 1714. was ſo great, that moſt of the Ponds of ſtanding Water were near dried up, and Cattle in ſuch Places wanted Water; or, where the Water was over-heated, the Cows, in particular about *London*, caught a Diſtemper (I ſuppoſe

ſuppoſe the Murrain) that was equal to the Plague, which cauſed many thouſand Cattle to die that Year, by communicating the Diſtemper to one another : But it was obſervable, that where the Beaſts had the Benefit of clear running Waters, they preſerved their Health : On which Account, thoſe Cattle that lived fartheſt from *London*, fared beſt ; becauſe near that Metropolis there is little running Water, beſides that of the *Thames*, tho' it is a Part where moſt is wanted, to waſh away the Filth that is produced from the Dung, and Stale of their Cows in particular ; for here great Numbers of them are confined in ſo little Ground, that in hot dry Seaſons they are forced, in ſome meaſure, to drink Part of their own Dung and Piſs, out of the green and black Waters of their Ponds and Ditches, notwithſtanding their being loaded with Inſects ; which brought their Cows under that contagious Sickneſs as obliged their Owners to burn ſome, and bury others in Pits, to ſtop the Diſtemper ; and this Winter and Spring 1743. there were many meazled Hogs, and others jogged under their Throats : The firſt is a Diſeaſe in Swine, compared to the Small-pox in the human Body ; and ſo deteſted when known, that ſuch Fleſh is prohibited being brought to Market ; yet ſome have been ſo hardy to do it, and had it burnt. The ſecond Diſeaſe is not ſo bad as the firſt ; for this ſeems to be the Favour of Nature in throwing off that Corruption which is bred from the Creature's Blood by a gathered Humour, and which, when ripe, we diſcharge by cutting, or running a red-hot Iron through the Bunch or Jogg ; and then the Hog gets ſound, but is not fit to be killed till the Evacuation is over. However, the Cauſe of theſe Maladies are imputed by ſome

to the ſtagnating Waters, and their Inſects, that the Swine drink in abundance in many Places: And this with good Reaſon; for I and others had our Store or Yard Swine, that go about at their Will, jogged in *December*, *January*, and *February*, *&c.* when our fatting Hogs, kept in Sties, ſtood perfectly ſound; becauſe the firſt drank nothing but the foul black Water of our Farm-yards, and contiguous Ditches, while the latter had clean Water given them from our choiceſt Ponds every Day.

The bad Situation of a Farmer's Pond in the Chelturne *Country of* Hertfordſhire, *and the ill Conſequences that have attended it.* —— In this Example, as well as in Thouſands of others, may be perceived the Ignorance of our Anceſtors: What can be more indiſcreet, than making a Pond in the Middle of a Farm-yard, where conſiderable Numbers of various Kinds of Beaſts and tame Fowls are kept, great Part of the Year, to feed on Hay, Straw, and other Meat, and where they diſcharge their Dungs and Urines? Yet there wants no other Proof of ſuch a ſilly Contrivance, than to ſee ſome of theſe Ponds, Ditches, and Drains, at this Day, in ſeveral Farm-yards; one of which Ponds I ſhall here take particular Notice of, as follows; *viz.* At *Icebrook* Hay-Farm, ſituated about two Miles diſtant from *Water-End*, there is a Pond in the very Middle of the Farm-yard, incircled with all the Dung that is made in the Stable, Hogſty, and elſewhere; by which the Waſh of the Dung runs into this Pond, and thickens it to that degree, that many have wondered how the Cattle could drink ſuch grouty, black, ſtinking Water, full of Lice, Worms, Bugs, and other Inſects: However, this Pond remains here, at this Day, notwithſtanding the Tenant had two of his Horſes died in half

a Year's time, of the Yellows and Strangullion, without ſuſpecting, that the original Cauſe was from the Foulneſs of this ſtagnated Water, and the Inſects bred in the ſame; which, by Cuſtom, the Beaſts were ſo fond of, that they would refuſe a clear River or Spring-water, when they paſſed through it, for this: And ſo others, that are uſed to drink at Springs or Rivers, would refuſe them for any Sort of Pond-waters.

The bad Situation of a Farmer's Pond and Ditch in the Vale of Alesbury, *and the ill Conſequences attending the ſame.*——Here the Farmer rented one hundred and fifty Pounds a Year, and kept eight Horſes, and ſixteen Cows, beſides Swine, and tame Fowls, whoſe Dungs and Urines, for good Part of the Year, were made in and about this Yard, by the Horſes in the Stable, by the Cows in the Cow-houſes and Yard, and by his Swine abroad, and in the Sties; from all which were waſhed great Quantities of black Water, that remained in a Pond in the Yard; and when that was ſo full as to run over, the Water ran into a contiguous Pond, and large Ditch. Here it was that moſt Part of the Farmer's Horſes had crack'd or greaſy Heels, which the black Water undoubtedly very much contributed towards breeding, by its ſulphureous and hot Quality, which, added to that of the Beans wherewith the Horſes were conſtantly fed, ſo heated their Bodies, as to produce, in a great meaſure, this Malady; and, I am afraid, another beſides; for Worms and Botts have been found, in large Quantities, in the Body of more than one of this Farmer's Horſes, that have died and been opened. Here I have ſeen Swine that have been kept to fat in a Sty, forced to ſtand up to their Bellies in Water, to feed out of a Trough, and drink the naſty Sort that ouſed into the Sty from Dunghils;

yet I cannot ſay the Hogs ſuffered on this Account; becauſe, I ſuppoſe, the Whey and Skim-milk they drank beſides, became their Preſervative. Nor has it coſt me a little to alter ſome Receptacles and Aqueducts, which were, in former Days, made on Purpoſe in and about my Yard, that were ſo ill contrived, as to let the Virtue of the Dung and Urines of my Horſes, Cows, *&c.* run off to a very great Loſs; a Loſs ſo common, that there is hardly one Farm-yard in our Pariſh of *Little Gaddeſden*, but what lets the Dunghil-water run into the Highway, and be, for the moſt part, loſt, notwithſtanding ſuch black Water is the very Quinteſſence of the Dung; for when this is thoroughly waſhed, there remains but an inſipid Virtue behind, that often helps to deceive the Ground it is laid on, and the Farmer its Owner: But if there is enough of ſuch Dunghil-water for the Cattle to drink, then ſome think it not loſt, while it thus ſerves for Home-uſe. But the before-mentioned Farmer is, ſince the Death of his Colt, become wiſer than he was, and has prevailed with his Landlord to be at the Charge of making him a new and large Pond, in a much more cleanlier and ſafer Situation, than that is at the Bottom of his Farm-yard, which lies always open for Cattle to drink at when they pleaſe. But my Invention anſwers a better End; for I have made a long Ditch that lies contiguous to my Kitchen-garden, capable to receive and hold the black Water that drains out of my Yard, which Cattle can't come at to drink, and yet ſerves me for ſeveral profitable Uſes, that I intend to give an Account of more particularly hereafter.

N. B. The before-mentioned Farmer, that loſt his Colt, has ſince had a large new Pond made, about fifty Poles diſtant from his Farm-yard,

yard, in a gravelly Bottom, free of all Communication of the Water that may run or drain from it.

How an Eel poiſoned a Dog. ——— A curious Perſon, a Searcher into the Secrets of Nature, made the following Experiment upon an Eel and a Dog: He got an Eel, of a pretty large Size, and nailed it up to a Place alive, where he let it hang a conſiderable time, till it voided a Liquor ſomewhat like Rheum, which dropped on a Piece of Bread laid on purpoſe to catch it: And, when the Eel died, they took away the Bread, and gave it to an hungry Dog, which, greedily eating it, did, in a little time after, appear poiſoned, ſwelled, and died. This Experiment having been thus tried, the Truth of it may be depended on, to the Surprize, undoubtedly, of many, that this Water-animal (which is eſteemed, in many Places, a dainty nouriſhing Food, when baked in Pies, or roaſted or broiled, *&c.*) ſhould be capable of emitting a venomous Liquor: But ſo it is, that if the Eel had not a poiſonous Quality in him, he could not diſcharge one. But, how far a lingering agonizing Death may turn a good Quality into a bad one, I leave to the prying Philoſophers to account for; who may likewiſe inform their Judgments a little farther, from what Mr. *Bradley* has obſerved in his general Treatiſe of Husbandry and Gardening, where he has theſe Words: "It is "likewiſe improper to have any Eels in a Carp-"pond, whether the Pond be for Breeding or "Feeding; for they are great Devourers, eſpe-"cially of the Spawn of Fiſh; unleſs indeed a "Pond be overpowered with Frogs and Toads, "and Fiſh do not breed in it; then the Eels will "help to deſtroy thoſe Vermin. From ſome late "Obſervations, I am apt to believe, that the

"Eel

" Eel is viviparous; that is, it brings its Young " alive into the Water, contrary to other Pond- " fiſh: For about the *Buoy* in the *Nore*, the Fiſher- " men take an Eel-like Fiſh about *Chriſtmas*, that " has then its Belly full of live Young-ones, almoſt " as ſmall as Hairs; and about that time of the " Year the River and Pond Eels are all bedded in " the Mud; or folded over one another, which I " ſuppoſe may be their way of generating: And I " wiſh about that time ſome of them were exa- " mined; for it is yet uncertain how they breed. If " the Water-Toad, or Frog, ſhould in that Pond " chuſe their Habitation, the Jack will be ſure to " fill his Belly; but his Fleſh is never the worſe for " that: The Fiſh that can only keep him Company " without Danger, are Eels, Flounders, and Perch: " The two firſt are as voracious as himſelf, and " have a conſtant Guard over themſelves; for " their Abode is always in the Mud, leaving only " an Hole open at the Mouth; at which they ſuck " in their Prey, as it paſſes by."

How a Water-Eff poiſoned a Cat.——The following Account was ſent me by a Correſpondent, whoſe Veracity I have reaſon to depend on, and therefore believe it to be genuine. His Words are theſe:——" *London*, *February* 20. 1743-4. Sir, " An ingenious Gentleman, whoſe Converſation " I lately had the Pleaſure of, was pleaſed to com- " municate the following Account to me, which " he had from the Gentleman himſelf; and " which I believe will be of ſome Uſe to you, " ſince, as you informed me, you intended to " write on the Nature of Water-inſects, *&c.* " ——It is this: An eminent Phyſician " at *Salisbury*, who was a great Virtuoſo, tried " the following Experiment, to diſcover whether " or not there was any poiſonous Quality in the " Water-Eff; *viz.* He put one into about a Quart

" of

" of clear Water from the Pump in a Baſon, and " ſupply'd him now-and-then with a ſort of weedy, " ſlimy Matter, or Scum, that accumulates, or " gathers, in a large Quantity, like a Cloud, " at the Bottoms of Ponds; on which (as well as " Fiſh) he had obſerved them to feed. This he " lived on for near a Fortnight (but did not re- " new the Water all this time), till he then ob- " ſerv'd the Creature (ſuppoſed for want of Wa- " ter, and Room enough to play himſelf in) to " throw out of his Mouth two or three Kitchen " Spoonfuls of frothy, ſlimy Matter, ſomewhat " reſembling the Frog's Spawn; and then expir'd. " The Phyſician thereupon was curious enough " to taſte this upon his Tongue's End, and found " it of a very pungent ſaline Quality, and made " all the Water brackiſh. Then he put ſome of " the Water for a Cat to lap, which ſoon after it " had done, it began to ſwell very much, and " was almoſt at the Point of Death; but at length " it recovered."

Obſervations on the Death of the Eel and Water-Eff.——The Water-Eff, as well as the Frog, *&c.* are eſteemed by moſt People harmleſs Creatures; nay, they are of Opinion, they do the Pond-water they live in a Service, by feeding partly on the Scum and Slime thereof, which helps to preſerve ſuch Water in a purified State; the Truth of which I am apt to believe, as the better Part of theſe amphibious Animals; but the worſer Part of them I never knew till of late: One Inſtance of which is here undeniably proved in the firſt of theſe; whereby is plainly ſhewn the bad Effect of a tedious panic Death of the Water-Eff; and which, however harmleſs in any other Condition (for the Boys frequently catch them for Paſtime, and never ſuffer any Damage by handling them), yet,

yet, by this way of the Eff's dying, it certainly evacuated a poiſonous, or venom'd Liquor, that it expired in, as fully appeared by the ſick ſwell'd Body of the Cat. From whence I would make this Obſervation, that where Eels, or Effs, live in conſiderable Numbers in a ſmall Quantity of Water; ſuch Water (it is my humble Opinion) ought to be miſtruſted, and the Uſe of it avoided, both for Houſe Occaſions, and for watering Cattle at, leſt theſe Animals, by ſome Accident they are liable to ſuffer in the Water, die a lingering panic Death, and thereby communicate a poiſonous Quality to ſuch Water, which may perhaps infect the Bodies of Men and Beaſts, and bring them under Sickneſs, if not Death. But for a further Account of the Nature of bad Waters, and pernicious Water-animals, I intend, in my next Monthly Supplement for *June*, to give another ſurpriſing Detail, by inſerting in it the Copy of a Letter ſent me from an ingenious Correſpondent, who made very curious Obſervations on the latter, and by my publiſhing ſeveral ſerviceable accidental Caſes of the former. I ſhall conclude this Chapter with the Copy of the following Letter; *viz.*

" *The poiſonous Nature of the Land-Eff; of the*
" *Row of a Barbel, and of Coperas Oyſters.*——
" Sir, As I am very much obliged to you for
" many Favours, I take all Opportunities to ac-
" knowlege the ſame; and therefore hope the
" following Account will not be unacceptable,
" ſince it may furniſh you with ſome Items you
" never heard of before: And if it ſhould con-
" tribute in any uſeful Degree to your great Un-
" dertaking, of furniſhing the World with ſer-
" viceable Novelties, I ſhall have my deſired Sa-
" tisfaction.——A Friend of mine ſays, that the
" Powder of a dried Land-Eff, or Swift, as they

" are

" are called in *Eſſex*, is a moſt deadly Poiſon :
" And that the Row of a Barbel (a freſh-water
" Fiſh, ſuch as we eat at *Reading*) is of a poiſonous
" Quality, inſomuch as to cauſe the Nails to
" drop off.——There is a Sort of Oyſters of
" late only brought to Town, called *Porto Bello*,
" which have a Coperas-like Taſte, and are of
" a poiſonous Nature (a young Woman's Lip
" having ſwell'd ſoon after eating them, told me
" by the Perſon who ſold them her) ; inſomuch
" that the Lord Mayor lately ordered a large
" Boatful to depart the Gate, or all to be thrown
" overboard."

CHAP. XIII.

Of Fiſhing for Trout, &c.

OF the Nature of Trout.——The Trout deſerves a more particular Account to be given of it, than of any other freſh-water River-fiſh whatſoever, becauſe it is the moſt profitable Sort we have in our inland Counties. It is ſaid to come in and go out of Seaſon with the Stag and Buck, and ſpawns about *October* and *November* ; which is the more admirable, for that moſt other Fiſh ſpawn in warm Weather, when the Sun by its Heat has cheriſhed the Earth and Water, making them fit for Generation. The Spawn of the Trout has been obſerved to produce about fifty ; of which there are ſeveral Sorts, as the Fordage Trout, the Armerly Trout, and the Bull Trout. That called the Char-fiſh, which is bred only in *Weſtmorland* and *Cumberland*, is thought to be a Sort of Trout ; and ſo excellent, when potted,

as to be ſold from one to three Guineas a Pot. But one of theſe came to me much cheaper, as a Preſent from a worthy Gentleman, whoſe Correſpondence I was favoured with. Some ſay the red and yellow Trouts are beſt, and that the Female has the Preference for its Goodneſs, having a leſs Head, and deeper Body, than the Male: By their large Back you may know, that they are in Seaſon, with the like Note for all other Fiſh. They are all the Winter ſick, lean and unwholſome, and often found to be louſy: Theſe Trout-lice are a ſmall Worm with a big Head, ſticking cloſe to the Fiſh's Sides, and ſucking Moiſture from him that gave them Being; neither is he freed from them till the Spring, or Beginning of Summer; at which time his Strength increaſes: Then he deſerts the deep ſtill Waters, and betakes himſelf to gravelly Grounds, againſt which he ceaſes not rubbing himſelf till he is cleanſed from that Louſineſs: From that Inſtant he delights to be in ſharp Streams, and ſuch as are ſwift, running toward the South, where he will lie in wait for Minnows and *May* Flies; at the latter End of which Month he is in his Prime, being fatteſt and beſt. They are uſually caught with Worm, Minnow, and Fly, either natural or artificial. There are ſeveral Sorts of Worms, which are Baits proper for the Angler; as the Earth-worm, Dunghil-worm, the Maggot, or Gentle: But for Trout, the Lob-worm and Brandling are accounted the beſt, or Squirrel-tail, having a red Head ſtreaked down the Back, and a broad Tail. The Brandling is commonly found in an old Dunghil, Cow-dung, Hogs-dung, or Tanner's-bark. But here take notice, that with whatever Sort of Worms you fiſh, they are better for keeping; which may be in an earthen Pot with Moſs, which muſt be

changed once in three or four Days in the Summer, and in twice as long time in the Winter.

As this Month of *May* is the prime Month of the whole Year for Angling, *&c.* eſpecially for that beſt of River-fiſh, Trout, I ſhall give ſome Account of the ſame.

To take Fiſh by Angling.—Get ſome brown Flies, put them into a little Mould, and put both into a Quart white Bottle, that has a very wide Mouth; put ſome Graſs on the Top, and ſecure it ſo well with a Cork, that no Water get in: To this faſten a Piece of Packthread, and ſink it: Then bait your Hook with an Ant-fly; let it down as near as you can over the Bottle, and you'll have good Sport, as we frequently find true in our *Hertfordſhire* gravelly Rivers.

A ſecond Way.—— Daub the Inſide of a little Box with ſome Vermilion finely ground, and put into it two or three or more Gentles, or Maggots bred in the Carcaſe of a dead Cat (which are always the livelieſt Sort); and by their rolling about in the Box for two Minutes before you make uſe of them, they will be of a beautiful red Colour: Faſten one of theſe to your Hook, only through the Skin of the Back (which will not kill it, as the common way through the Head or Body does), and you need not fear good Succeſs, if you mind to be quick enough to draw as ſoon as you perceive they bite; otherwiſe you are likely to loſe your Bait and Time.

A third Way.—— Take Oil of Ivy-berries, or the Sap obtain'd in this Month of *May*, by piercing the Body of the Ivy; putting in a Quill, and a Phial faſten'd to it, will, by now-and-then ſmearing the Box you keep your Baits in, with a Drop or two of it, make the Fiſh bite a great deal ſooner,

The Breed and Nature of the Caddis Fly.——All Flies are bred from a Caddis, that is to ſay, from a Worm. The Caddis, or Trout Fly, is hatch'd in the Water, after lying in its Neſt all or Part of the Winter. In *May* it arrives to that Maturity, as to become bulky enough for the Water to cauſe its Aſcenſion from the Bottom of the River: And when it is got to the Surface of the Water, I have obſerved with a great deal of Pleaſure how this large Fly betakes itſelf to its Wings, and leaves its Shell or Neſt behind it floating on the River. This Fly has three ſhort Hairs or Arms at its Head, and three longer ones at its Tail; are all the Month of *May* riſing at times out of the Water, very fat, with a blackiſh Body, and a whitiſh Tail; in which Condition they are catch'd for baiting Angling-hooks, and are certainly the beſt natural Baits of all others for taking Trouts: They never feed after their firſt Flight, but grow leaner, and leaner; inſomuch that in a few Days time they'll crack or pop on ſqueezing, and generally return and die on the Water they came from. This wonderful Fly ſerves for Part of the Trout's Subſiſtence in this Month, which are ſo voracious after this their dainty Prey, that commonly they greedily bite at it on the Hook. At *Wincheſter* I ſaw a Man angling with the Caddis Fly, juſt by one of the Bridge Arches, where the Water had a great Fall, and was very rough: Yet he ſeem'd to catch more Fiſh here than any other I ſaw fiſhing in the ſmoother Part of this River, becauſe a Trout ſwims, for the moſt part, againſt the Stream.

Of catching Trout by the Hyde.——In my former Work I have given ſome Account of the Hyde for catching Trout, as being a very great Conveniency for this Purpoſe; becauſe by this Invention a Perſon may command a Diſh of Fiſh without

without waiting their being taken by the Angle, or by throwing a Net into a River. This Hyde is made with Joiſts and Boards, Part whereof compoſe two large Flap-doors, that are made to open when the Fiſh is to be taken out after being catched, by letting two or more Boards fall down in a Notch or Frame on each Side of the Doors, that generally are ſo large as to extend croſs a narrow River, which incloſes all the Trout that are hid in the Hyde; for here theſe Fiſh lie to ſhelter themſelves in great Security againſt the Sun, Air, and Poachers, as may be ſeen in ſome of the *Hertfordſhire* and other Rivers.

How to take Trout, Eels, and other Fiſh, in the Night-time. ——— To do this, make a little Boat, or get a wooden Bowl, about the Bigneſs of the largeſt Punch-bowl, in Readineſs: When this is done, provide yourſelf alſo with a Glaſs Flaſk broken at Bottom, which you are to fix in Clay over a lighted Candle; then tye a Leather Pipe about the Neck of the Flask, that ſhould not exceed four Feet in Length: This faſten on one Side of the Boat or Bowl, and on the other Side faſten baited Hooks: By this the Fiſh will gather about the Flask, and bite at the Baits. But this Sort of Fiſhing muſt be confin'd to a Water that is not above three, or three and an half Foot deep at moſt, that the Leather Pipe may have Liberty to ſtand almoſt erect, with a ſufficient Part of it above Water: And if the River has a ſandy or gravelly Bottom, you may ſtand at the Side of a narrow River, and have a Chance to ſee Eels play, and get an Opportunity of ſtriking ſome with Eel-ſpears.

N. B. The Clay that is to be made uſe of on this Account ſhould be mixed with Salt, for keeping Water the better out of the Flask.

A ſecond Way.——Get a white glaſs Phial, and put therein divers coloured Silks, ſtop it cloſe, and let it lie on a gravelly or ſandy Bottom; for theſe Colours will amuſe the Fiſh, and cauſe them to gather and ſtay about the Phial in great Numbers, ready to bite at your Baits, or to be catched by Nets.

A third Way——is ſaid may be done thus: Take Spirit of Mars or Iron, and Spirit of Caſtor or Aſper, half an Ounce of each: Of this Mixture take a Tea-ſpoonful, and put among it an Handful of great Bran; work and roll it, and throw little Bits of it into a Pond or River: It will ſhine like Diamonds in the Water, and cauſe the Fiſh to come to, and eat them; and tho' it won't poiſon them, it will make them drunk, ſo that they may be eaſily taken.

A fourth Way.——If you would do this with Ground-bait; in the firſt place, you muſt have a neat taper Rod, light before, with a tender Hazle-top: You may angle with a ſingle Hair of five Lengths, the one tied to the other, for the Bottom of the Line, and a Line of three-hair'd Links for the upper Part; and ſo, if he has room enough, you may take the largeſt Trout in the River. He who angles with a Line made with three-hair'd Links at the Bottom, and more at the Top, may take Trouts; but he who angles with a ſingle Hair, ſhall take five to his one; for this Fiſh is very quick-ſighted: Therefore the Angler muſt keep out of Sight, whether it be by Day or Night; and he muſt angle with the Point of his Rod down the Stream. He muſt begin to angle in *March* with Ground-baits all Day long; but if it prove clear and bright, he muſt take the Morning and Evening, or elſe his Labour will be in vain. He that angles with Ground-bait, muſt fit his Tackle, and begin

begin at the Upper-end of the Stream, carrying his Line with an upright Hand, feeling his Plumbet running on the Ground about ten Inches from the Hook, plumbing his Line according to the Swiftneſs of the Stream that he angles in; for one Plumbet will not ſerve all Streams. For his Bait, let him take the red knotted Worm, which is very good, where Brandlings are not to be had. The Minnow (or, as ſome call it, the Penk) is a ſingular Bait for a Trout; for he will come as boldly at it, as a Maſtiff Dog at a Bear. It will be advantageous to him to uſe a Line of three Silks, and three Hairs twiſted for the uppermoſt Part of the Line, and two Silks and two Hairs twiſted for the Bottom, next the Hook, with a Swivel near the Middle of his Line, with an indifferent large Hook. If you fiſh for a Trout, by Hand, on the Ground, take a Lob or Garden-worm, and put your Hook into it, a little above the Middle, and out again a little below the ſame; then draw your Worm a little above the Arming of your Hook, making your firſt Entrance at the Tail, that the Point of the Hook may come out at the Head. When you fiſh with the Minnow, chuſe the whiteſt and middle-ſized, thoſe being the beſt; and ſo place him on your Hook, that he may turn round, when he is drawn againſt the Stream. The beſt Way of baiting with the Minnow is thus: Put your Hook in at his Mouth, and out at his Gills, drawing it through about three Inches; then put the Hook again into his Mouth, and let the Point and Beard come out at his Tail; then tie the Hook and his Tail about with a fine white Thread, and let the Body of the Minnow be almoſt ſtrait on the Hook: This done, try againſt the Stream, whether it will turn, which it cannot do too faſt: For want of a Minnow, a ſmall Loach, or Stickle-

back,

back, will ſerve. The Angler muſt angle with the Point of his Rod, down the Stream, drawing the Minnow up the Stream by little and little, near the Top of the Water: The Trout, ſeeing the Bait, will come moſt fiercely at it; but the Angler muſt not then preſently ſtrike. This is a true Way, without Lead; for many times they will forſake the Lead, and come to the Minnow.

How a Gentleman, reduced by Sickneſs to a very weak and declining, Condition recovered, and got Fat by the Uſe of Tench Broth.——In order for my Reader's entertaining the better Notion of this excellent Fiſh, I ſhall, in the firſt place, give a particular Account of it, as deſcribed by an ingenious Pen:——"Tench," ſays he, "is a delicate "freſh-water Fiſh, that has but ſmall Scales, "yet very large and ſmooth Fins; he has a red "Circle about his Eyes, and a little Barb hang-"ing at each Corner of the Mouth. This Fiſh "delights more among Weeds in Ponds, than in "clear Rivers, and covets to feed in very foul "Water; yet his Fleſh is nouriſhing and pleaſant: "His Slime is ſaid to be of a very healing Qua-"lity to wounded Fiſh, and, upon that account, "has obtained the Title of the Fiſhes Phyſician; "nay, the devouring Pike is ſaid to be ſo ſenſible "of his Virtue, that he will not hurt a Tench, "though he will ſeize upon any Fiſh, of his Size, "that comes in his Way: And when the Pike is "ſick, or hurt, he applies to the Tench, and "finds Cure, or Relief, by rubbing himſelf againſt "his Body." At *Gaddeſden* I have theſe Fiſh in my Ditch and Pond; for they will live even in Horſe-ponds, where other Fiſh will not, becauſe of the Foulneſs of the black Water; and yet this ſeems to have no ill Effect on the Fleſh of this delicate Fiſh, which is both pleaſant and nouriſhing,

beyond

beyond all other freſh-water Fiſh; and which will the better appear from the following Account: A Gentleman, being reduced, by Sickneſs, to a very low Condition, was adviſed, by his Doctor, to go down to his Seat near *Huntingdon*, and ſup Tench Broth; which he accordingly did; and, finding the great Benefit of it, continued taking it ſo long, that he always returned to *London* fat.

The Receipt how to make Tench Broth.——Take a Tench that weighs one Pound; cut him in three Pieces, and put them into a Jug, well corked, to as much Water as, when all is ſtewed, there will be a Pint, or a little more: Let the Jug boil five Hours in a Pot, or Kettle, of Water. In the mean time, let a Quarter of a Pound of Sago be boiled in Water, in a Pot by itſelf. When the Tench Broth is boiled enough, mix the Liquor of one with the other, and drink it as Soup or Broth. This Receipt was given me by the late Reverend Mr. *Colemore*, Vicar of *Edlesborough* in *Bucks*, who aſſured me of the Gentleman's Caſe aforeſaid.

The Copy of a Letter received from an unknown Hand.

London, *May* 31. 1744.

Mr. Ellis,

I Have been a conſtant Buyer of all your Works, as they have appeared; and was ſurpriſed, that there was no Account, in your laſt Monthly Book, of the Buſtard, as you promiſed, and was adverti ſed: Should be glad you would let us know how that Bird, and the Pheaſant, may be brought up, with little Trouble and Charge, in great Towns, in a Room, *&c.* as you hinted: Hope to have a full Account of Park and Deer; ſeveral curious Receipts farther in Country Affairs, and in relation to a Country Houſewife's Matters: How to de-

ſtroy, or take, all manner of Vermin infeſting the Countryman; ſomething in reſpect of finding, increaſing, and preſerving Game; the Laying-out a Country-Seat; what ought to appertain to it, to render it commodious and delightful, either for a Nobleman, or for a private Gentleman; and divers other Things in the Rural Taſte, which, it is apprehended by many of your Friends, you can write on; and will be exceedingly taking.

I am, SIR,

Your Friend, and Humble Servant.

I don't live far from you; ſo don't know but I may do myſelf the Pleaſure of ſeeing you this Summer. Don't care how expeditious you are in publiſhing your Works.

In Anſwer to this, I can only ſay, as my Undertaking is great, it requires ſome Time to perform it in; and that, for my Intereſt-ſake, I will do it as faſt as I can.

CHAP. XIV.

Of Trees.

THE great Benefits of preſerving the Shoots of Trees and Hedges from the Bite of Cattle, ſhewn by the Damage reſulting from ſuch Bite. —— Mr. *Worlidge* ſays; "Forbear cutting or cropping "Trees you intend ſhall thrive, till *October*." And he is very much in the right, of cautioning againſt the ſame; becauſe now the Sap ſeems to be

be in almoſt its full Action, by ſupplying every Arm, Bough, and Twig, with its thin Liquor, at this Time ſo rarefied by the Warmneſs of the Weather, that it is delivered from that denſified thick Conſiſtence, and inactive State, it was in by the Coldneſs of Winter-weather; which cauſes it to circulate in this Month, in Trees, Shrubs, and Herbs, and forward their Growth in new and vigorous Shoots; upon which depends the Inlargement of Trees, Shrubs, and Plants, that are now in their infant Growth, and tendereſt State: Wherefore our greateſt Care is more required in this Month, than any other, to prevent all manner of Cattle biting or cropping any firſt young Shoots of Trees or Hedges; becauſe their Bite, at this Time of Year, is perfectly venomous: Which I prove thus: If the Shoot, or young Branch, of a Tree or Shrub, is bit by Horſe, Cow, or Sheep, in this Month, the Sap, more or leſs, will ſurely iſſue out of the Part, as out of a Wound; and, by the Shoot's loſing all or Part of its Blood or Sap (which is the Life of it), it either dies, or becomes ſo weak, as to keep only in a languiſhing Condition all the ſame Year, and longer. But if it is a ſingle Shoot, without any collateral ones, it is in the greater Danger of being intirely killed by ſuch Bite or Crop; for then the Sap of the whole Plant being moſtly contained in ſuch a ſingle Shoot, it is here diſcharged at the Place ſo bitten, in Part, or in the Whole; but if there is any other Shoot from the ſame Root, or Side-branch from the ſame Shoot, that has eſcaped a Bite, the Damage will not be ſo great; becauſe, though the bitten Shoot dies at the Wound, and about it; yet the Sap, contained in the Side-ſhoot, remains not ſo much hurt, but may proceed in its Growth the ſame Summer, but not with the ſame Vigour, as if none of the Branches had been bit

or cropt; for a Bite, even of one Branch, affects, in ſome degree, all the reſt, be they ever ſo many, from one and the ſame Root; becauſe the Loſs of ſome Sap is Part of the Whole. This, I think, is enough to ſhew my Reader, how careful he ought to be in the Preſervation of his Trees and Hedges, againſt the Bite of Horſe, Cow, and Sheep, eſpecially where theſe grow in incloſed Fields, becauſe here they are of double Advantage to a Farmer; to thoſe Hedges that are planted and grow in open Fields, for here they are planted more for the ſake of the Wood, and Boundary-marks, than for Fences. But, for farther explaining this important Matter, I ſhall proceed as follows; *viz.*

How a Farmer damaged a very profitable Hedge, for many Years afterwards, by careleſly ſuffering his Cattle to crop it in this Month.——The Hedge I am here about mentioning, was firſt well planted with Variety of Sets, as Oak, Beech, Aſh, Hazel, Sallow, and Thorn, on a good loamy Soil, and in the Home-Cloſe, where it grew in a very vigorous flouriſhing Condition, even to that degree, as to give the Farmer an Opportunity, at every nine Years End, to cut and plaſh it; and then it yielded him ſo much Fagot-wood, as made the Ground it grew on pay as much as any other of the like Quantity, under Corn or Graſs, beſides proving a ſafe incloſed Fence againſt the Breaking-out of any Horſe, Cow, or Sheep, and nouriſhing thoſe ſeveral Timber and Fruit-trees that grew, at proper Diſtances, in the ſame Hedge. But ſo it was, that this Hedge, as I ſaid, ſtanding in the Home-Cloſe, the indolent careleſs Farmer ſuffered his Cattle, Night and Day, to have free Acceſs to it, and bite and crop it at their Pleaſure; and this at an Age, before its Top-ſhoots had grown high enough to be out of the Reach of their Mouths; which ſo venomed and ſtunted its Growth,

Growth, that its wounded Parts cauſed the whole Plants to ſicken and decline, inſtead of making a forward growing Progreſs; inſomuch that this very Hedge, by ſome Repetitions of the ſame Damage, never recovered its former uſual profitable Growth, for near twenty Years after; whereby the Tenant became not only his own Enemy, but likewiſe ſo to his Landlord; for by ſuch his ill Husbandry, he leſſened the Value of the Farm, either for Letting or Selling; becauſe, when a Tenant, or Buyer, takes a View of a Farm for this Purpoſe, and ſees its Hedges in ſuch a diſmal Condition, he is preſently apt to believe the Land is worſe than it really is; for, according to the Growth of the Wood, ſo he eſtimates the Goodneſs of the Ground; and thereby he is induced to offer a Price proportionable for the ſame. And though this Plea may be juſtly alleged, that the Hedges afforded ſo poor a Proſpect, by reaſon the Tenant ſuffered his Cattle to crop and eat them in their infant ſappy Growth; yet I have heard ſuch a Plea made uſe of in vain to a Purchaſer, unacquainted with Country Affairs, who could not be brought to believe ſuch ſorry Hedges were occaſioned by any other Thing than the Poverty and Barrenneſs of the Soil.

CHAP. XV.

An Account of a new Attempt to feed Sheep among Pea-Crops.

I CALL this a new Way, becauſe ſuch an Attempt was never known in theſe Parts, till very lately; and then it was firſt done about *Kenſworth*, *Flamſtead*, and *Market-ſtreet*, which are three Places lying in and near the great *Dunſtable* Road, for

for feeding Ewes, with their Lambs, in Pea-fields, that were ſown with Hog-peas, to ſtand for a ripe Crop. But another Incentive to this new Piece of Husbandry was, the Deſtruction of the wild Oats, which, in theſe Parts, grow in great Quantities, in their light, chalky, gravelly, and loamy Grounds; believing that theſe Animals, with their narrow Mouths, would bite and feed on them, before they would meddle with the Peas: Accordingly, the Sequel proved their Notion right; for the Ewes and Lambs being turned into a Field where the wild Oat was its proper Height, and in its ſweeteſt ſappy Condition, they fell upon eating them, in Refuſal of the green Pea-ſtalks, and their Heads. In this Caſe, the Growth of the Peas, as well as that of the Weeds, is to be particularly regarded; for if the Ewes, and their Lambs, are turned into ſuch a Field, while the Peas are very young, they would be apt to eat them, as well as the Weeds: Therefore they obſerve, not to turn theſe Creatures into a Field of Peas, till they are grown pretty high, as they commonly are about the latter End of this Month; and then they will feed amongſt them till they are almoſt ready to bloom, and yet do the Pea little or no Damage, provided the Ewes, and their Lambs, are ſhifted and removed in due time; that is, when they have pretty well eat up the Weeds, they ought to be taken out of the ſame Field, and put into another, leſt their Hunger oblige them to feed on the Pea-ſtalks, and do conſiderable Damage. But here is room, on this Account, for an Objection to this Practice; That the Ewes, with their Lambs, if they don't bite off the Pea-heads, they may, by their Tread, bruiſe the Pea-ſtalks, and hurt the Crop. This, I own, may happen in ſome degree; but, conſidering the Good the Sheep do in eating down the wild Oat, and other Weeds, and the Dung and

Stale

Stale that they leave behind them, a much greater Advantage may be obtained this way, than by not feeding Sheep among Peas. But, for a farther Proof of this, I have to ſay, that, in this Month, ſome take in Road-ſheep, to feed them thus among their Field-peas, at ſo much a Night a Score, as they travel in their Way to *Smithfield* Market in *London*, and find their Account in it; for Experience ſhews, that Sheep prefer the wild Oat, and other Weeds, to Pea-ſtalks; and, by this new Way, the Farmers, that follow this Practice, get more Money by their Peas than formerly, when they did not take this Method. However, I have this to add, that though ſeveral Farmers turn Sheep in, every Year, to feed in their Pea-fields; yet I muſt own it to be a bold Way of proceeding; even ſo bold, that ſome of their Neighbours, to my Knowlege, are afraid to do the like. Any Perſon, therefore, that doubts the Veracity of what I here write, may inform themſelves of the ſame, at the aforeſaid Places, where they may have full Satisfaction of the ſame.

CHAP. XVI.

Of Buſtard Wild Fowl.

THIS moſt excellent, beautiful, large Fowl, juſtly deſerves to be bred tame, tho' it coſt, at firſt, a little extraordinary Expence, to get a Couple of them in their infant or chicken Growth, or for getting their Eggs; becauſe their Bodies will pay their Owner more Profit than any other Fowl they can keep about their Houſe. I know a Gentleman, that keeps ſome of theſe, declares, he would not take ten Pounds for one of them. I know another, that had ſeveral of them caught,

by Greyhounds, while ſo very young, that they could not make their Eſcape from the Dogs. But more of this in the following Accounts.

The Copy of a Letter from a Perſon, concerning the Taking and Improving that noble large *Engliſh* Wild Fowl the Buſtard.

SIR,

I Received yours; and the Reaſon I did not anſwer it ſooner, is, becauſe I could not reconcile myſelf to the Inquiries; but ſince, from more ſubſtantial Aſſertions, I learn, that the ſafeſt Way of bringing up Buſtards is, to catch them as early as poſſible after Hatching, which generally is in large Pieces of Rye, adjacent to Pieces of Barley: They feed and conceal themſelves in Rye in the Day-time, and in Barley in the Night, or early in the Morning. They lay in Rye, and cover their Eggs as a Turkey does, and are much of the ſame Nature and Diſpoſition, being very ſullen and ſulky. Thoſe that are caught the ſooneſt after hatched, are the eaſieſt reconciled to a Familiarity with thoſe that feed them; which is firſt done, by cramming them with Crumbs of Wheat-bread and Milk, and ſometimes ſmall Pieces of freſh Meat; which muſt be done, until they are capable of feeding themſelves; which, with frequently being ſo fed, will become familiar, and feed out of your Hand: And, when ſo accompliſhed, they may be put into a Garden, where they will feed of Lettuces, and almoſt all Sorts of Grain. They are very ſcarcely hatched here, there having been but two caught in the Space of four Years; one of which was taken in a Piece of Barley, near to a large Parcel of Rye, the laſt Spring. I can learn by no Inſtance, of their being hatched otherwiſe than by their own Species; but, I imagine, if their Eggs

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can be found, before ſet upon, may certainly be brought forth by a Hen, as ſometimes Turkeys are. Shepherds are the propereſt to procure you Eggs, or Young-ones; and if I can procure either for you, will endeavour to bring them to ſome Perfection. Your profeſſed Friendſhip to my Son engages me to return you my hearty Thanks, and to inform you, that you may command any Service within the Power of,

SIR,

Burwell, Nov. 20. 1743. *Your obliged, humble Servant.*

Remarks on the foregoing Letter, concerning the Breed of Buſtards.——According to my Promiſe in my former Works, I here give a further Account of the Nature of this bulky delicate wild Fowl, which juſtly claims the Regard of our Nobility and Gentry in particular for its Propagation, and Breed in the tame Way. Firſt, Becauſe this Bird yields a moſt charming pleaſant white Fleſh, and therefore fit for the Table of the greateſt Lord and Lady. Secondly, For its large weighty Body, which, as I have heretofore obſerved, has weighed between twenty and thirty Pounds, Guts and Feathers included, that renders it a very profitable Family Fowl. Thirdly, For its beautiful Sight, which is not a little engaging to a curious Spectator. Next to the Cock Pheaſant and the Heathcock, I am of Opinion the Cock Buſtard, as a wild Fowl, ſhews itſelf in the fineſt Colours. Fourthly, For that the Nobility and Gentry are beſt able to defray the Charge of obtaining their Eggs or Young-ones, and afterwards to maintain them in a proper Place ſuitable to their Natures; for, without this Conveniency, it is to little Purpoſe to attempt their tame Breeding. In Parks, Graſs-walks,

Viſtoes, *&c.* the Buſtard may be made a moſt noble Inhabitant; for here he will not only grace the Place with his Preſence, but get good Part of his Living by picking up Snails, Caterpillers, and other Inſects; and feed on Lettuce, Rapes, Turneps, Beech and Oak-maſt, parboil'd Fleſh, and other Viands: And where they are kept among Beech-trees, in a plentiful Year of their Maſt, this Bird, between *Michaelmas* and *Chriſtmas*, will almoſt fat on this Food alone, as well as great Numbers of both wild and tame Turkeys do. Hence it is, that I cannot but obſerve the Neglect of great Numbers of our Gentry, who are Owners of Parks, or fine incloſed Fields, whoſe Soils are agreeable to the Growth of the excellent Beech-tree, and yet take no manner of Care to propagate it. If it is not for the ſake of its Timber, yet for its ornamental Shade and Sight, for its Shelter to Deer, Pheaſants, wild Turkeys, Buſtards, *&c.* it ought to be moſt ſtrenuouſly endeavoured after, as ſome few of the more Judicious have done this laſt Winter and Spring 1743. by ſending their Orders by Letters to me for ſome thouſand of Beechen-ſets, which I readily furniſhed, and ſent them by Carriers to their appointed Places, in the freſheſt manner I could well do: But of this more hereafter; and now return to my preſent Subject: Which leads me to obſerve, that the breeding of Buſtards tame, may be as well done as breeding Pheaſants, *Guiney* Hens, wild Turkeys, Swans, Partridges, Heathcocks and Hens, Canary Birds, Lions, and other wild Creatures, tame, as is now done contrary to the Expectation of our Forefathers, who were ignorant of theſe great Improvements of Nature. But ſo it is, that both animate and inanimate Creatures have of late Years been brought over from diſtant Climates, and by Art (the Handmaid

of Nature) made to multiply their Species in *Britain*, where, till within theſe thirty or forty Years, paſt, they were perfect Strangers to our Northern Region; which plainly ſhews, that many other curious and profitable Things may, by Art and Diligence, be likewiſe brought to Perfection with us, which was never yet done. In which Number I here propoſe the Buſtard wild Fowl to be bred tame, and its Species multiplied in as prolific a manner as any of the wild Turkeys are, which at this time are kept, and in their Breed annually increaſed, by many of our Nobility and Gentry. It is true, that the Buſtard, as well as the Pheaſant, *&c.* is naturally a wild Fowl: But don't we ſee wild Turkeys, Pheaſants, *Guiney* Hens, *&c.* bred tame; and if afterwards let to fly at their Pleaſure, will not forſake the Park or Place they are in, but remain in them, and the neighbouring Woods and Fields, ready for the Owner taking them at any time, if not diſturbed by Poachers? By the ſame Rule, if the Eggs of Buſtards are hatched under a tame Turkey or Dunghil Hen, I don't in the leaſt doubt from what I have ſeen, but that they may be brought up in the ſame domeſtic Manner, to be ſo much in Love with their native Habitation, as to prefer it to all others for their conſtant future Reſidence. But to come to more Certainty, and avoid all Riſque of the Buſtard's flying away, and turning a wild Fowl again after being bred tame; it is only pinioning or cutting one Wing, and then the Danger of thus loſing is over: Or otherwiſe; if a Perſon has a mind to enjoy this dainty huge Bird in its original State of Feathers without pinioning or cutting, it may be done as I have heretofore given an Account of; *viz.* by fixing Network about eight Feet high from the Ground, ſupported by Poſts, and ſecured on all Sides by paling of Boards, that

no young nor old Buſtard can poſſibly make its Eſcape, and yet have the Benefit of the open naked Air. Thus ſeveral Acres of Land may be employed in divers Partitions; allowing a Rood more or leſs to each ſquare Partition, which may give an Owner the Opportunity of keeping in one Part white Peacocks, in a ſecond wild Turkeys, in a third Buſtards, in a fourth Pheaſants, in a fifth *Guiney* Hens, in a ſixth Partridges, in a ſeventh Water-fowls, and ſo others: And in the ſame Partitions of Ground, Turneps, Rapes, Green Wheat, and other Vegetables, may be ſown, and made to become Part of their healthful Subſiſtence both in Summer and Winter; by which, with dry Corn, Pollard, Raſpings of Bread, and other Food, they may be nouriſhed and fattened with great Expedition into the ſweeteſt Fleſh. By ſuch Management in the open Air, where they have their Range at Pleaſure, or confined in theſe Network Partitions, an Owner may at any time command one or more of theſe Buſtards, where, by Cuſtom, they may be brought to anſwer the Whiſtle, and come at an uſual cuſtomary Time to their feeding, twice or thrice a Day, as it is now done in a certain Park, where Pheaſants and Partridges come at the Whiſtle-call, as naturally as Dunghil Hens and their Chickens do at the Mouth-call of a Farmer's Maid-Servant; which if any Gentleman doubts the Truth of, and has a mind to be ſatisfied of the ſame as an Eye-witneſs, let him come to my Houſe; and for paying me only for one Day's Riding with him, I will wait on him to the Place where theſe ſeveral Network Partitions are actually in Uſe for confining, breeding and keeping ſeveral of the Sorts of Fowls before-mentioned. What a delightful Conveniency then may a Gentleman thus enjoy, who by this means can command a noble Diſh of wild Fowl of di-

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vers Sorts on any emergent Occaſion, and in the quickeſt, freſheſt, and ſweeteſt Manner poſſible, at any Seaſon of the Year, at the cheapeſt Rate! Surely, did our *Britiſh* Gentry know the great Felicity that is to be enjoyed in an hundred Branches of a Country Life, they would no longer neglect the Means of obtaining it; but endeavour, with all their Might, to be Maſters of them with all Expedition; that their Country Seats may become ſo completely furniſhed with ſuch Beaſts, Fiſhes, Fowls, Fruits, *&c.* as may render them capable to entertain and regale the greateſt Potentate, at a ſmall Charge, in the moſt elegant Manner, free of that exceſſive, ruinous Expence, of buying theſe Creatures at a ſecond and worſt Hand: Theſe charming Improvements would certainly make Gentlemen more in Love with their rural Habitations, and leſs with a Town-Reſidence. But I muſt ſtop my Pen here, for employing it in a more particular and extenſive Manner hereafter, when I have more Room to diſcuſs this weighty Matter: And here farther obſerve, that if a Buſtard is one of, if not the largeſt wild Fowl we have in *England*, in its natural State; it may be ſtill improved in Bigneſs and Goodneſs of Fleſh, by caponizing the Cock in its firſt Year of Growth. Now, to get the Buſtard bred tame, you may ſee, by the Copy of my Correſpondent's Letter, that the Buſtard lays its Eggs in Rye, which, in the Month of *April*, is high enough to cover and conceal them from the Sight of Perſons that may accidentally walk near them; for this Grain, generally growing in ſandy, gravelly, or other dry Soils, forwards the Growth of the Rye, and preſerves the Buſtards Eggs from Chills of Water, notwithſtanding theſe great Fowls make no Proviſion, by way of a Neſt, to hatch their Eggs in; but lay them in a little hollow Place, made ſo by the Tread of Horſes, or otherwiſe, like

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the Curlew, Lapwing, and ſome others, that run with ſome of their Shell on their Back: So that, whenever theſe Eggs are deſigned to be found, and brought away from the Field, to be ſet under a fine Turkey or Dunghil Hen, Shepherds are the propereſt Perſons to be employed in queſt of them, as they attend their Flocks in open, champagne Fields, in the Months of *April* and *May*; and, when they have found them, to put them immediately up among Bran in Boxes, and ſend them away to the Part deſired. And, though ſome Eggs may be ſat on, and thereby rendered unuſeful; yet, if a Perſon can get ſo many ſound ones, as to have a Cock and Hen Buſtard hatched and bred up, they will more than reward him for a great Expence, as giving him hereby an Opportunity of increaſing the Breed, to his very great Profit. But there is another Way to come by theſe Buſtards; and that is thus: In the Month of *May* there are young Buſtards, which are eaſily run down in Rye or Barley; for, about the Fore-part of this Month, theſe green Crops are ſeldom ſo high, as to hinder a Perſon's purſuing and taking them: And the ſooner they are caught, the tamer they'll be, and with leſs Trouble be reduced to a Familiarity, as my Correſpondent juſtly obſerves: Therefore I would here give Notice to Gentlemen, that may think fit to employ me to get Eggs of Buſtards, or young Buſtards, that they ſend me early Orders, to enable me to employ Perſons, in different Parts, time enough for getting them in *April* and *May*. But, for an Example of Induſtry, I ſhall here inſert the Copy of a moſt ingenious worthy Baronet's Letters to me; who is ſuch a Lover of rural Improvements, that he delights to be at his Country Seat, even in cold Seaſons of the Year in Refuſal of living, for the moſt part, in his magnificent new Houſe at *London*.

Sir

Sir *John* ——— Baronet. The Copy of his Letter to this Author.

SIR, *April* 2d, 1744.

I HAVE this Day finiſhed your Month of *April*, as alſo all your other Works formerly; for which the World is greatly obliged to you. This is the firſt time I have ever heard of the Kerroon Cherry; and, as I love all Sorts of Improvements as much as any body can, I ſhall beg you to ſend me ſome, if you have any to ſpare: Twenty Trees will plant the Ground I can ſpare for them at preſent. I own, it is too late to plant; but I am ſo well ſupplied with Water, that I hope, if I have them ſoon, that they will ſucceed. I ſhall alſo deſire one thouſand of your Beech-ſets, and a few Cuttings of your white Elder. I would not have the Cherry-trees old. If you can ſend me a few Trees of young Parſnep-apples and Orange-pears, I ſhall take it as a great Favour; who am, *&c.*

Sir *John* ——— Baronet. His ſecond Letter concerning Improvements in Husbandry.

SIR, *April* 13th, 1744.

I Received the Favour of yours this Morning, and am much obliged to you for the Trees. I ſhall plant them as you direct me; which is a Method I have followed this Seaſon in planting ſeveral Fruit Standard-trees, which I plant round my Fields, near my Houſe, as other People do Foreſt-trees. The Soil here is on a marly Clay, but over it very good Virgin Earth in moſt Parts. We have had a continual Rain theſe three Weeks, which will help my new Plantation, and ſave the Trouble of watering the Trees.

I ſhall

I ſhall be greatly obliged to you for your Receipt to keep off Slugs and Flies; and will pay you a Guinea willingly, as I am ſure it will anſwer, as you affirm its Succeſs.

I keep a Farm, of an hundred Acres, in my own Hands, half Arable, and half Meadow; and, according to my Succeſs in Farming, ſhall increaſe, or decreaſe, my Quantity; and ſhall be greatly obliged to you for any Hints, that you ſhall give me, as to Ploughing.

As to the fifty wild Cherry-ſtocks, I ſhall be very glad of them; and ſhall prepare the Ground for them directly.

I lately read your Book for the Month of *May*; where, I find, you recommend a Pole-bull, becauſe of the frequent Accidents that attend the others. I intirely agree with you, and intend to keep no other. I have hitherto kept a large Dairy of *Holderneſs* Cows, which are too large for me, though my Land is good: Beſides, they eat an infinite Quantity of Hay in Winter, which don't anſwer, in my Opinion, except near *London*, where Grains may be had in Plenty for them. I now intend to try the *Welſh* or *Scotch* Pole-breed, which give Milk enough, and do not require ſuch Keeping in Winter. I own, my *Holderneſs* Breed is more beautiful; but, I believe, the others will anſwer better. I am, Sir,

Your conſtant Reader, and humble Servant.

P. S. I have this Moment received the Trees; *viz.* ſixteen Cherries, twelve hundred Beech-ſets, one Apple, and the Cuttings of Elder, all ſafe: But there were two of the Cherries tied ſeparate from the reſt. I beg to know, whether they were different from the reſt; they ſeem ſo by the Bud.

Sir

Sir *John* ——— Baronet. His third Letter to this Author.

SIR, *April* 27th, 1744.

I Received your laſt Letter, and have planted the wild Cherry-ſtocks, according to your Direction; and don't doubt but they will thrive apace, as they are in very rich Soil.

I alſo thank you much for your Receipt againſt Slugs and Flies: I have juſt tried it among a young Crop of Broccoli, and hope it will anſwer.

We have had ſo much Rain here, that it will greatly help my new Plantation, which is very fortunate.

I am, at preſent, in great Diſtreſs for a good Dairy-maid, my own having married, and left me: It's a Servant not eaſily found in this Country. If you will excuſe the Liberty I take, I ſhould be greatly obliged to you, if you could recommend me one well qualified, that can make good Butter, and fat and breed up Turkeys and Pheaſants, and Things of that kind: Perhaps you may hear of one near you: I have made all the Inquiry I can here, and can't find one to depend on.

I have inquired, of late, to find Cows of the Pole-breed; but can't find any; ſo muſt wait till I hear of ſome; but I fear they are not Plenty: I prefer them, as many Accidents happen, which can't from Them.

A Neighbour of mine has a very large Nurſery of Arbutus-trees, five Feet high; and has given me a Parcel, which I have planted at thirty Feet Diſtance, round a Field joining my Garden; and has a moſt beautiful Effect: I have alſo planted out the Beech-ſets you ſent me, to make a Wood, for Shelter for my Pheaſants and wild Turkeys; of which I have a great many.

I paid your firſt Bill to Mr. *Aſtley*; and ſhall ſend him the Remainder by my Servant that goes to Town, in two Days.

I have had ſome Graſs-ſeed from——in *America*, called *St. Timothy-ſeed*; which is an artificial Graſs, that will grow ſix Feet high, and will mow four or five times in a Summer, in good Ground: I have ſow'd it in my Garden, and hope to have a good Crop of Seed from it: If I have, as I hope, from its being come up very green, I will ſend you ſome, if you care for it: A Friend of mine try'd it laſt Year, with very great Succeſs. I am, Sir,

Your, &c.

The Author's Remarks on Sir John's *three Letters.*

——My ſeveral Anſwers to this Gentleman's Letters I forbear to inſert here, becauſe they would take up too much Room in this Month's Book: And, therefore, I ſhall conclude this Chapter, with only making ſome Remarks on them, which are on this Gentleman's diligent and bold Attempts to get a Year's Growth of the Cherry-trees, Beech-ſets, and Elder-cuttings, *&c.* the ſooner; though he laid out his Money, and planted them, ſo late as in *April* 1744. This I cannot but admire; but the leſs, when I conſider how much he is Maſter of the true Notion of planting Trees, and managing them afterwards: A Qualification that all Gentlemen Planters ſhould be endued with; becauſe, whoever, in my humble Opinion, underſtands and practiſes this aright, may enjoy a Tree in half the Time that uſually attends the common, wrong, careleſs Way of planting and managing it afterwards. This may, perhaps, be of infinite Conſequence to thoſe who would improve their large Eſtates, not only for bringing in an early Profit, but for giving them an Opportunity to ſee a noble Plantation, before they are too old to loſe the Pleaſure

and Taſte of ſuch a valuable and delightful Improvement: A Method I communicate to all who buy Trees of me! For I furniſh Gentlemen with theſe Beech-ſets, and improved and wild Cherry-trees, *&c.* out of my Nurſery, and the Woods, as I did to this Perſon, to whom I ſent in all, beſides the improved Sort, ſixty-one out of our Woods, at Nine-pence apiece, with full Roots, and clear Bodies, ſix or ſeven Feet in Length; and hope, by his artful Management of them, their Sap will run ſrim and thin enough in *June* or *July*, for readily receiving Buds of the Kerroon Cherry, that I ſend to any Purchaſer of ſuch wild Trees *gratis*, for that Purpoſe. The Enjoyment of the Kerroon Cherry-tree is certainly of ſuch Importance, that no Gentleman in *England* ought to be without it, who has an agreeable Soil and Situation for its Growth: And yet few, very few, have any Notion of this delicate Tree, and its Fruit; which not only yields a noble Repaſt at Table, but far better in the Cellar, when rightly made into a rich, pleaſant, wholſome Wine, equaling, if not excelling, ſome Sort of Foreign red Wines; for the very Nurſery-men in *Middleſex* are, moſt or all of them, Strangers to the true black Kerroon Cherry-tree; as I proved to be the Caſe, in the Month of *April* 1744, upon Inquiry among them for ſome of theſe genuine Sort, that I wanted, to make up a certain Number for a Gentleman. Nor did this Sir *John* ———, as he freely acknowleges, ever hear of the Kerroon-cherry, before my Book gave him an Account of it; though his Seat is not a great many Miles from *London*. But the Fruit and the Liquor are not the only Encouragements for planting this Nonſuch-tree; the Wood of it is likewiſe of great Profit for its faſt-growing into Heart, under good Management, as being at its beſt Eſtate in ſixty Years time; and

then, perhaps, it may ſell for one Shilling a Foot, as I did one, whoſe Body was two Feet Diameter, that was ſown into Boards, or Planks, for making Tables, *&c.* in Imitation of the true Mahogany-wood. His Beech-ſets will be alſo very ſerviceable to him, as I have obſerved, for producing a Wood to grow into Timber, bear Maſt, and ſhelter his Deer, Pheaſants, and wild Turkeys. And when I heard this Gentleman planted his Fruit-trees round his plowed Fields, on Graſs-balks, it gave me the more Pleaſure to find a Perſon after my own Taſte; for in this Method I plant my own Kerroon and other Fruit-trees, in ſingle Rows, which yields far more Pleaſure and Profit than Foreſt-trees. My moſt valuable Receipt to keep off Slugs and Flies, *&c.* this Gentleman gave me a Guinea for, on my bare Word, as being able to warrant its Succeſs: It is no Powder; for that will waſte away with Rains; nor can Chaff, nor Malt-duſt, retain their Efficacy, when thoroughly ſoaked by Wets; for Water will render them ſmooth, and give the Slug an Opportunity to crawl over them; but my cheap Ingredient, that dreſſes the Land at the ſame time, is not to be ſerved ſo; for, if it rains a Week or two together, it ſtill anſwers the Purpoſe of keeping off Slugs, Flies, Worms, *&c.* The Pole-breed of Cows I help Gentlemen to, from a Breed now kept by a Nobleman. Maid or Men Servants I alſo hire for Gentlemen, as living near the beſt Dairy-Country for Maids, and in the beſt County for Plowmen, *&c.* To conclude; this moſt worthy Gentleman, whom I never yet ſaw, was pleaſed to employ me, confide in my Honeſty, and paid my Bill honourably.

An ESSAY *upon the Nature of the Adder, Viper, Slow-worm, Snake, Fox, Badger, Land Eff, &c. and particularly upon the Reſidence, the Bite, the Venom, and the Cure of the three firſt; ſet forth in many Matters of Facts never before publiſhed: To be continued throughout the twelve Monthly Books of* Agriculture Improved. *By* WILLIAM ELLIS.

AN Eſſay on the Nature of theſe Animals I have been the more encouraged to attempt, as I live in a County that, perhaps, is furniſhed with greater Numbers of them than any other beſides in *England*; for here our many incloſed dry Fields, Woods, Hedges, and Commons of Furze and Fern, give the moſt agreeable and natural Shelter and Encouragement for them to propagate their Species in abundance; and alſo becauſe no Author whatſoever has hitherto publiſhed a ſufficient Number of Facts, to ſhew where the Reſidence of theſe poiſonous Creatures is made Choice of by them; how a Perſon may beſt avoid being bit by them; or, if bit, the different Ways of curing themſelves: At leaſt, ſeveral of thoſe who have attempted writing on theſe Creatures, have done it ſo inſipidly, and ſome, I believe, I may ſay, ſo erroneouſly, that a Reader is little or nothing the better for it (with Exception to that great Phyſician and Caſuiſt, Dr. *Mead*, who, I underſtand, has exceeded all others in writing a Book on Poiſons, which I never ſaw, and a few others); an Example of which I ſhall ſhew, by tranſcribing what Mr. *Worlidge* ſays of Snakes and Adders; *viz.*

The greateſt Injury (ſays he) that Snakes and Adders do to us, is in biting Children, Cattle, *&c.*

They affect Milk above any thing; and, as old Authors ſay, abominate the Aſh: There you

may

may uſe the one by placing of it hot in any Place where they frequent, to attract them, where you may deſtroy them; and the other by laying aſhen Sticks in Places where you would not have them come: But this of the Aſh is not credited.

But the moſt proper Remedy againſt theſe Vermin, is to keep Peacocks, which prey upon them.

Their Sting or Bite is moſt eaſily cured, if you timely apply a hot Iron to it, holding it ſo near as you are able to abide it: And it is by ſome ingenious Perſons affirmed, that it will attract the Venom totally from the Wound.

Travellers relate, that in the *Canaries* the Natives cure the Biting of a very venomous Creature (that lurks among the Grapes, and uſually bites them by the Fingers) by opening the Place bitten with a ſharp Knife, by a ſtrait Ligature below the Wound; and holding the Finger bitten upright for ſome time, out of which the Venom aſcends, it being of a firy Nature, naturally tending upwards; and may therefore be attracted by Fire, its Like.

Remarks upon Mr. Worlidge's *Account of Snakes and Adders.*——By the Account Mr. *Worlidge* here gives of Snakes and Adders Bites, he ſeems to put the Bite of the former upon a Parility with that of the latter, which is wrong; for there is a vaſt Difference between both the Breed and Bite of the Snake and the Adder: The Land Snake breeds her Young by Eggs ſhe lays for the moſt part in Dunghils, that are hatched by the Heat of it. The Adder alſo breeds her Young from Eggs; but they are bred in her; and brings them forth alive: Which occaſions the Virtuoſo to diſtinguiſh them, by ſaying the Snake is bred oviparous, and the Adder viviparous. The Bite of the Snake is not ſo venomous as to cauſe more than a Soreneſs of the Part bitten; and is eaſily healed,

healed, even without any Application, in good-natur'd Fleſh. But the Bite of the Adder is certainly mortal, if not ſtopt and cured by timely Art. The Land Snake therefore is frequently caught and made familiar, without doing any thing to it for preventing the ill Effects of its Bite. But the Adder, before it is uſed thus, muſt be deprived of its lurking Poiſon under its Teeth, and not to truſt to that old ſilly Notion, repeated by many Authors, who have tranſmitted it down even to be mentioned by Mr. *Worlidge*; that aſhen Sticks will prevent an Adder's Approach to the Place they are laid on. Egregious Miſtake! for our Adders lie and breed in the ſame Hedges where aſhen Stems grow. But this Error, as far as I can find, was firſt publiſhed by *Adam Speed* 1629. and reprinted in 1697. wherein he ſays Adders will not come near aſhen Leaves; that, if Deers Suet is ſtrewed on the Ground, the Scent of it will make them fly from it; that large Radiſhes are the Bane of them; and that the Smoke of Centaury and Wallwort will drive them away. Indeed I muſt own what Mr. *Worlidge* writes, that a hot Iron will extract the Venom of an Adder-bite, to be true. But this is a diſtant Remedy; and probably, before it can be applied, the Poiſon may have penetrated too far into the Blood; and then where is the Safety of ſuch a Remedy? Which leads me to publiſh a preſent Remedy, and one that may be depended on for the curing of any Adder-bite, that was tried in the following manner; and is ſo ready an one, that if a Perſon has no Remedy about him, this may effectually ſupply it. But before I do this, I ſhall give ſome Account of the Nature and Reſidence of the Adder or Viper.

The Nature and Reſidence of the Adder or Viper. —The Words *Adder* or *Viper*, by many, are taken for ſynonymous Names, or Terms, for one

and

and the ſame Animal. Others inſiſt on it, that they are diſtinct Serpents, and that both alike bring forth their Young alive. The Viper is ſaid to be a little ſhorter and flatter-bodied than the Adder, and has a more firy Poiſon; for that it kills in three Days at fartheſt, if not prevented. It is an univerſal Venom, heating the Body as if it was ſet on fire; attended with Convulſions, Weakneſs, cold Sweats, Vomiting, and then Death. The Adder is a hotter Serpent than the Snake, but leſſer and ſhorter, and of a darker Colour; little or no way inferior in its Poiſon to the Viper, but thicker, longer, and of a brighter Colour: His Skin is compoſed of circular Scales; by which, when extended, he crawls, rears himſelf up, climbs a Tree or Buſh, and ſuddenly inlarges himſelf as if he leap'd; he is of a cold Nature, and therefore ſlow in his digeſtive Faculty: Some ſay he has no Stomach; but that, to ſupply it, when he ſwallows a Mouſe, a Mole, a Frog, or young Bird, whole, in the Bite he mixes ſome of his Saliva or Poiſon with it, which corrodes and digeſts the Fleſh. Adders are found to be more numerous in the Southern Parts of *England* than elſewhere, as in *Cornwall*, *Devon*, *Dorſet*, *Somerſet*, *Wilts*, *Hants*, *Berks*, *Surry*, *Kent*, *Eſſex*, *Middleſex*, and *Hertfordſhire*; occaſion'd, I ſuppoſe, from the Dryneſs of their Soils, the great Shelter of their Woods, Hedges, Fern and Furze Commons, and the warm Temperament of their Air, *&c.* But I could never learn, that any Adder, or Viper, or Snake, was ever found in *Alesbury* Vale, and very few, if any, Land Snakes in *Hertfordſhire*; if there be any, they lie in that Part next *Middleſex*. An experienced Adder-catcher aſſerts, that this Serpent ſheds his Skin or Hackle every Year; the Male twice, the Female once; and have but one Caſt or Litter of Young in that time.

Their

Their Teſticles lie within-ſide in the hinder Part of their Body, about the Thickneſs of a common Packthread; and, as I have obſerved, are about an Inch in Length: Theſe are ſaid to help their crawling. The Adder is found above Ground from *February* to *September*; in which laſt Month they commonly earth themſelves for the Winter in Holes of the Ground, in Banks, in Hedges, in Woods, in the Roots of old Trees, and in old Walls. A Labourer was ſtocking up the Root of an old Oak near my Houſe, which when he had got about two Feet down into, he pulled out a rolled Adder, with his Mattock, that lay in a dry Place, where he obſerved were ſeveral Holes made in the Ground about it, an Inch wide each, ſuppoſed to be done by this Adder for the Conveniency of lodging its Young: In a Quarter of an Hour's time ſhe began to crawl, but was ſoon diſpatched by the Man. Near the Reſidence of the laſt lay another, which he likewiſe kill'd the ſame Day: And on the Morrow, at the ſame Place, he dug out a third, which he alſo killed, as he thought; but on the following Evening, to his great Surprize, he found all three alive, two Male, and one Female, as he diſcovered by their Skins: The Males he knew were bred but the Summer before, becauſe they were not ſo big as the Female. The ſame Man has found an Adder under an Hazel-root, and another under one of an Aſh, without any manner of Proviſion for the Winter; for theſe Creatures ſubſiſt all that time on their own Body and Spirits, by a Stupefaction, and ſomniferous Quality, inherent to their Nature; as is evident alſo by the many that have been found in the Winter in the ruinous Walls of the old Caſtle at *Berkhamſtead*, *St. Peters* in *Hertfordſhire*; where is a dry hilly Situation, that gives the Boys frequent Opportunities, in the frigid Seaſons, to

take and carry them about that Town in their twiſted Poſture for the View of the Curious. And here ſome of them are ſeen to arrive at a ſurpriſing Bulk, beyond the Field Adder: But whether this is owing to their Plenty and Variety of Food in a contiguous large Garden, Nurſery, and grazing Ground, or to their ſafe and long Shelter among the Crannies of the old Walls, I cannot determine: However, this ſeems to confute the common Notion, that the Adder never ſurvives his firſt Litter or Brood; becauſe, as they ſay, the Young-ones eat their Way out of their Dam's Belly, after they have been received therein ſo often, till their Strength and Bigneſs enables them to perform it. They live on Mice and Moles, which they take in their Holes; alſo on young Birds, Frogs, young Hares and Rabbets, and therefore of ill Conſequence in Warrens: They have been known to climb a ſlender Tree eight Feet high, and devoured young Magpyes in their Neſt. If an Adder is found in a Place To day, he will not be far off the ſame To-morrow; for theſe have always their Reſidence near their Hole, nor is the Male at any great Diſtance from the Female at any time. On *Berkhamſtead*, *Hudnal*, and many other Commons in *Hertfordſhire*, Adders are often found by the Men that cut Furze for their Living, and mow Fern; for in theſe they enjoy a ſafe Shelter: And though the ſharp prickly Ends of the Furze keep off Boys and Men from ſearching after them, they do not hurt their Bodies; for their Skin is proof againſt the Spines of this Vegetable. On this Account the Furze Common becomes one of the greateſt Sort of Nurſeries to the Breed of theſe Animals: And as our Part of the Country is accounted the woodieſt and hillieſt Part of *Hertfordſhire*, Adders breed here in the greateſt Plenty. Near the famous large woody

Park of *Aſhridge* runs an Hedge from North to South, on the Ridge of an Hill of plowed and Graſs Grounds, that by this Situation has the Sun to ſhine on it early in the Morning, and late in the Evening; which Hedge extends its Length near half a Mile, and is commonly ſo well furniſhed with Adders, that a Catcher of them declared it was worth thirty Shillings a Year to him; for that he always took care, on catching ſome, to leave enough behind to breed a Stock for him another Year.——Now, as theſe Accounts have taken up ſo much Room in my Book, I am forced to poſtpone writing my firſt-mentioned Propoſal, how a Perſon may cure himſelf of an Adder's Bite upon the Spot of Ground where he receives the Damage. But this and others, pleaſe God, I intend to inlarge on in my next Monthly Book of *Agriculture Improved*, for the Month of *June*.

CHAP. XVII.

Of the Nature of the deſtructive Slug in May.

OF an Experiment made on the deſtructive Slug, or little naked Snail, by a Plowman.——It was on the 9th Day of *May* 1744. that my Plowman ſowed fifty Buſhels of Coal-ſoot over two Acres and an half of Barley, that was ſown broad-caſt, or in the Random-way; and, being a backward cold Spring, its infant green Blade did not begin to appear till about the 1ſt of this Month; and on the aforeſaid 9th Day, as my Servant was ſowing the Soot, he perceived great Numbers of Barley green Blades lie on the Ground, as if ſomething had bitten them off near their Roots, where they are the ſweeteſt and tendereſt. This moved his Conſideration what ſhould have been the Occaſion

of it; querying, whether it was the Worm, the Slug, or the Beaks of Field-fowls: But it was not long before this his Curiosity was satisfied, by the Sight of many Slugs, or naked little Snails, that lay on the Surface of the Ground; which confirmed him in the Assurance, this Mischief was done by the Slugs: And as he was thus sowing the Soot, he had a mind to try an Experiment with the same on a Slug. To do which, he took one, and put it on some Soot; then he took more Soot, and covered the Slug all over: But all this did not overcome the Insect; for when he felt the sulphureous black Powder affect his Body, it so enraged him, that he seemed to employ his greatest Efforts to make his Escape; but, finding the Dryness and Roughness of the Soot prevented him, the Slug slipped his outward Skin, or what we call his Hackle in *Hertfordshire*, and crawled away, leaving this slimy loaded Coat with Soot behind him; which furnished him with a lighter and smoother Body, and enabled him to get away with the more Facility. The Ploughman, seeing this, had a mind to try a second Experiment, in the Manner he did the first; and accordingly buried the same Slug, as before, in Soot; which irritated the Creature to that degree, as obliged him to slip his outward Skin, or Coat, a second time, and make a crawling Escape from the Place. The Man, seeing this amazing Action performed by this small Animal, was resolved to try a third Experiment on the same Slug; and, for this Purpose, laid it a third time in Soot, as he did the first and second time: And here it was, that the last Trial ended with the Life of the Creature; for now his Strength failed him, and he presently expired in the little Parcel of Soot. From hence I would observe, that I suppose the greatest Virtuosoes never made the like Experiment as my Ploughman

Ploughman has done; which, though done, as it were, accidentally, it may, perhaps, tempt ſome greater Wits to ſcrutinize into the Make and Nature of this Animal, which, to Farmers and Gardeners, is a moſt peſtiferous Creature: To the former; as it is one main Occaſion, ſometimes, of rotting Sheep; for theſe Slugs, in warm wet Weather, in ſome Years, will lie on Commons, and in Fields, in great Numbers, in a ſmall Space of Ground, where the Sheep being obliged to feed, lick up their ſlimy Bodies, and ſwallow, for aught I know, as it is very probable, abundance of them, that helps to increaſe the watry Quality in Sheep, and prove their Bane, according to the general Notion of both Vale and *Chelturne* Farmers. Theſe are the Inſects which devour Crops of Peas, Rapes, Turneps, and other Vegetables, while they are in their infant Field-growth; and likewiſe damage Crops of Wheat, Barley, *&c.* To the latter; they infeſt Gardens, and are deſtructive Arch-Enemies to moſt Things that grow therein; and, in ſome Years, are ſo numerous, as hardly to be conquered; as I ſhall farther ſhew, by what follows; *viz.*

How a large incloſed Field of Peas was devoured and eat by Slugs.——In the Pariſh of *Studham*, in *Hertfordſhire*, a Yeoman, Owner of a very large Farm, that he occupied Himſelf, having ſown one of his incloſed Fields, containing twelve or fourteen Acres, with Hog-peas, in the Random-way of ſowing them; a wettiſh warm Seaſon ſucceeded, which gave the Slugs the greateſt Encouragement to come out of their Cells, and feed on the luſcious, young, tender, green Heads of the Peas; and they ſo fed on them, notwithſtanding his drawing his heavy, large, wooden Roll, of eight Feet long, over them, that they devoured ſo many of them, as obliged this Perſon to plow up the whole Field,

Field, and ſow the ſame (if I miſtake not) with white Oats.

How another Farmer loſt Crops of Hog-peas, by the Slugs, in 1744.——This Piece of Deſtruction was committed by the Slugs in the Month of *April* and *May* 1744. In *April*, there was a Fortnight's or more Rain fell, which invited the Slugs in queſt of their firſt and Spring Food; for theſe Creatures are of the ſomniferous Tribe, that ſleep all the Winter; but whether they be Annuals, or longer-liv'd Animals, I can't determine; I am inclined to think they are of the firſt Period: This I know, that they are bred by Eggs laid in the Ground, rather below the Plough's Entrance, and this in a very numerous manner; which, in mild Winters, and wet Summers, increaſe at an infinite rate, in a very little time; for nothing ſtops their Breed, but very ſevere long Froſts, and very dry Weather: And, therefore, we have had but very little of their Company, ſince the hard Froſt of 1739, till now; which contributed, in a great degree, to the Plenty of Grain, *&c.* that has ſince happened. But theſe laſt three dry Years being very mild ones, and few Showers of Rain falling, they ſeem now to have recovered their uſual Numbers, that do the Farmers and Gardeners great Damage; as was the Caſe of this Farmer I am writing of; who, after he had ſown his Hog-pea Seed in the random broad-caſt Way of ſowing them, and harrowed them in, the Peas grew up very well, with a promiſing Proſpect of a plentiful Crop: But ſo it was, that as their green infant Heads grew up, the Slugs lay at them, and gnawed their little Leaves, till they were ragged; and, at laſt, the very Stalks were, in a great meaſure, devoured by them; ſo that ſeveral Pieces of Peas, in a common Field, not far off *Gaddeſden*, were moſtly ruined by theſe Slugs: And, as the Peas were ſown in a common Field,

Field, among Parcels of other Peoples Land and Corn, this Farmer could not re-plow and ſow the Ground again with white Oats, or other Corn, that would bear latter'd ſowing.

How theſe two Farmers might have prevented their Pea-crops being ſo much damaged by the Slugs.——Here were two Faults attended theſe Crops of Peas: One was, that the Farmers did not keep their Ground in ſufficient Strength of Heart; if they had, the Richneſs of the Soil, very probably, would have forced the Peas into ſuch a quick Growth, as to have cauſed them to grow faſter than the Slug could have eaten them. The other was, the Farmer's rolling his Peas in the Day-time; which was wrong acting, becauſe then the Slugs were, moſt of them, retired into their ſubterranean Cells, and lay ſafe out of the Squeezing of a Roll. Therefore he ſhould have obliged his Servant to roll his Pea-crop about One or Two a-clock in a Morning, when the Slugs were moſt buſy in feeding on it; then he might expect to have had all, or moſt of them, ſqueezed to Death, by his Eight-feet-long heavy wooden Horſe-Roll, and have preſerved his Peas. But there are two other Remedies, that would have infallibly prevented the Ruin of theſe Pea-crops: One is, by the new-invented double Horſe-break: If the Peas had been ſown in the Drill-mode, and this Machine employed afterwards in a right Time, then the Slugs could not have hurt the Peas to any great degree: The other is a Remedy I never yet publicly diſcovered, nor privately, except to two Gentlemen, as I have before hinted; which would have aſſuredly ſecured theſe Pea-crops, that were ſown in the Random-mode, from the Slugs Rapine, and forced on their Growth with much Vigour: So that whoever are Maſters of this Horſe-break Inſtrument, and my Receipt for the other Application,

tion, need not fear what Hurt this horrid Inſect can do to either Field, or Garden-crops, ſown in any manner of Faſhion.

CHAP. XVIII.

Of the Sparrows Miſchief to Farmers.

OF the Breed of Sparrows in the Month of May. ——Of all Birds that do the Farmer Miſchief near Home, none is ſo hurtful as the Sparrow; and therefore his Deſtruction ought to be moſt diligently endeavoured: And, as Prevention is preferable to Remedy, their Breed, in this Month, may, in a great meaſure, be prevented; whereas, if they are let alone to perfect their Young, it may, perhaps, be out of a Farmer's Power to deſtroy all of them afterwards. Now this is the firſt and chiefeſt Month in the whole Year, for killing young Sparrows in their Neſts; that is, as they build them in *April*, they hatch in *May*; and if they are not deſtroyed in their Eggs, they ought to be before the Young-ones can fly. The Sparrows differ from moſt other ſmall Birds, in the Multiplication of their Species; for theſe build their Neſts in the Thatch of Barns, under Tiles of Houſes, in Holes of Walls, and hollow Trees, and among the Boughs of a thick-headed Tree. There was a Boy who found a Magpye's Neſt in a Tree, that had Eggs in it; upon which the Magpye forſook it, and a Pair of Houſe-ſparrows took Poſſeſſion of it, by making a Neſt on the Magpye's Neſt, and laying Eggs in the ſame. The Boy, ſome time after, climbing the ſame Tree, to take out young Magpyes, that he thought, by that time, had hatched, to his great Surprize found a Sparrow's Neſt, and the Magpye's Eggs under it:

And,

And, on *Gaddeſden-Green*, a very high Fir-tree grew, whoſe Body, after it was cut down in 1743. meaſured above ſeventy Feet in a ſtrait Length: This Tree, being furniſhed with a thick cloſe-branching Head, became a Refuge for many Sparrows to build their Neſts in; becauſe it was ſo high, that nobody dare climb it; and it was from this Nurſery-tree, that I, and ſeveral Farmers, ſuffered conſiderable Damage, by the great Numbers of Sparrows bred here. In the Beginning of this Month, therefore, their Neſts ſhould be deſtroyed, and ſeveral times afterwards in the ſame Summer; but more than ordinary now, becauſe their firſt Young will be ready to fly about the Middle of *May*; and, if the old ones are not hindered, they will breed till, and in, Harveſt-time; ſo that, it is thought, one Pair of Sparrows will bring up three or four Broods in a Year, if they are unmoleſted, and, perhaps, have five or ſix Young-ones each time; for theſe hot Birds are ſo prone to increaſe, that if their Eggs are taken out, and their Neſts are left behind, they will lay more Eggs in the ſame, as being a Bird not eaſily frighted, and made to forſake its old Habitation.

The Damage that Sparrows do to Farmers.——— The Sparrow is the moſt domeſtic Bird of all others; and therefore the moſt capable of plundering and ravaging the Farmers Barns, Granaries, and Home-fields of Corn, *&c.* which this ſmall Creature is very capable of doing, by his very hard Corn-bill, and ravenous Nature, that prompts him to make many bold audacious Attacks, not only in Barns, Stacks, and Ricks of Grain, but alſo on the Wheat, Rye, Barley, Oats, and Peas, in Fields, when their Kernels, before and when they are got hard enough to become their ſubſtantial Food, eſpecially that Part of the Corn that grows on the Outſides of Fields, next to

Hedges; for here theſe voracious Creatures fly from the Grain to this cloſe Shelter for their Safety and Refuge; but where the Sparrows are in a large Flock, theſe outſide Ears and Pods will not ſatisfy their keen Appetites: I have known good Part of a Field of Barley damaged by them, while it was ſtanding to ripen; for theſe Sort will keep on the Wing, while they peck the Barley-corns out of the Ears. Secondly, Wheat alſo, in its unripe Kernels, and afterwards, till it is reaped, the Sparrows take all Advantage of glutting their Stomachs with this nouriſhing Food; and afterwards, while it ſtands in Shocks in the Field: But moſt of all, when a Crop of Wheat, Rye, or Barley, by its great Bulk, falls down, and is laid flat, by heavy Rains; then the Sparrows make prodigious Havock, by enjoying an eaſy Opportunity of ſtanding to peck out its ſoft Grains. Thirdly, It is the ſame with Field Pea-crops, that, by their couchant Poſture of Growth, give Flocks of Sparrows a free Acceſs to their Pods, which their ſtrong Beeks penetrate with little Pains, to come at, and eat, the green and ripe Peas within them: And this Miſchief they do with the greater Eagerneſs, as this delicious ſweet Food is preferred by them to moſt others: So in Gardens, where the largeſt Sort of Peas are made to climb up Sticks erected for producing their greater Increaſe, and ripening them ſooner than ordinary into the largeſt Pods; as theſe Crops generally grow near the Houſe, theſe Home-Birds I have known to devour, I believe I may ſay with Aſſurance, above half a Crop in a little time, while the Peas were in their green Pods. Fourthly, Sparrows are likewiſe Arch-Enemies to Tree-fruits, Apples and Pears, while they, in their tender, green, infant Growth, are pecked at by them, as they prove a Novelty to them in this ſcarce Corn-

ſeaſon

ſeaſon of the Year: So Mulberries, the early *Kentiſh* red Cherries, the black Kerroon, Hearts, and all the improved Sorts, as they are a ſoft luſcious Food, that, for the moſt part, grow in Gardens, Orchards, and Home-fields, the Sparrows lie at them all the time of their Ripeneſs, and furiouſly feed on them; ſo that, in a ſcarce Year of Cherries, when the Gardener and Farmer ſhould make the moſt of thoſe few they have, theſe Sparrows become their horrid Enemies, and deprive them of good Part of their Crops. Fifthly, Sparrows not only hurt us thus in our Barns, Fields, Orchards, Gardens, *&c.* but even in our Farm-yard, by ſettling among our Hens, and eating Part of the Meat we ſometimes throw among them twice a Day; which gives a Flock of theſe bold familiar Birds an Opportunity to devour great Quantities of Grain in a Year, to a Farmer's great Loſs, beſides the infinite Numbers of Kernels that they peck out of Ears of Wheat, Rye, Barley, *&c.* thrown into the Yard, after they have been threſhed, and eſcaped the battering Force of the Flail's Blows, to get them clean out. The Sparrows, and only the Sparrows, dare enter our Hog-ſties, Stables, Cow-houſes, Rabbet-houſes, and other Out-houſes, and feed among our Swine, Horſes, Cows, and Sheep, which, in the Winter-time eſpecially, they ſeldom fail to do; and this they venture to do with the greater Aſſurance, if they are kept out of Barns and Granaries, from feeding on the Grain that lie in them; for theſe domeſtic Enemies are endued with ſo much Courage and Subtlety, as to enter into theſe Places through very ſmall Holes and Crevices; and, when they have found out a free Paſſage into full Quantities of hoarded Corn, they then fail not of being frequent Porters of ſuch eaſy-come-at Food, and carry away great Numbers of its Grains in a very

little Space of Time; insomuch that, it is computed, every Dozen of Sparrows, killed before the Breeding-season, saves the Farmer a Quarter of Corn before the Year's End. Sixthly, Sparrows are said to be Enemies to Bees, according to Dr. *Warder*, who, in his Book of the Monarchy of Bees, *p.* 63. has these Words: "There is yet "another Enemy, which passes almost unsuspect-"ed, which destroys abundance of Bees; and "that is the Sparrow, especially in their Breeding-"time. The manner of seizing their Prey is "thus: They come hopping on the Ground be-"fore your Bees; and if they find none pitched "on the Ground, they jump up, and take them "flying, and away to the Nest with it, and come "and fetch another. Indeed, all the time of "their having Young-ones, both young and old "have their Living mainly upon Bees. The best "Way to prevent, at least, a good Part of this "Mischief, is to encourage Boys, in the Spring-"time, to spoil their Nests; and, now-and-then, "for giving them a few Farthings, you may have "all the Nests near you destroy'd." But where they are not destroy'd, take the following Method to keep them off your Corn, while it is standing in the Field:

To keep off Sparrows from Crops of standing Corn, Fruit of Trees, &c.——To do this in the most lively Manner, catch one, or more Sparrows, with a Trap-cage, Lime-twigs, or with a Bat-fowling Net; then take one, or more, and hang them up by the Leg alive, with a Packthread-string, to a Pole or Stick, in the Field or Garden; and, by its screaming Noise, it will frighten the rest, and keep them from coming near the Place.

Remarks on a Letter, said by Mr. Bradley *to be written to him, on account of the great Service that small Birds do to Fruit-trees,* &c. *by their devouring several*

ſeveral Sorts of Inſects.——At Page 216. in his Second Volume of Husbandry and Gardening, the Letter begins thus: "*Sir*, Reading lately Mr. "*Mortimer*'s Treatiſe of Husbandry, I took no- "tice of his remarkable Prejudice againſt the "winged Species, inſomuch as to wiſh for a Law "for extirpating ſeveral Tribes of them: I ſhall, "in this, beg Leave to be an Advocate for theſe "Innocents, who cannot ſpeak for themſelves; "and endeavour to ſhew, that the Service they "do us, abundantly balances the Inconveniencies; "and that, inſtead of being Nuiſances, they are "Bleſſings; and that, without them, we ſhould "be like the Land of *Egypt* under the Curſe, "That the Graſshoppers would come, and Cater- "pillers innumerable, and would eat up all the "Graſs in our Land, and devour the Fruit of our "Ground; and multiply ſo exceedingly, as to "creep into Kings Palaces; and Flies would ſo "abound, as to be extremely incommodious to "us."——That he has obſerved a Couple of Sparrows, who had Young-ones, make twenty Turns each Hour; and, reckoning twelve to the Day, one Neſt, in one Week's time, deſtroyed 3360 Caterpillers: That the Wren, Tomtit, and other numerous Breeders, deſtroy a much greater Number, who feed fourteen or fifteen Hours in a Day: That as he lodged at a Gardener's, five Miles off *London*, in the Houſe, Barn, and Stable, there were ſeven Neſts of Sparrows, two of Robin-red-breaſts, two of Wrens, and one Redſtart: In the Orchard and Hedges, one Chaffinch, one Hedge-ſparrow, two Tomtits, two Chats, one Linnet, one Yellow-hammer, and one Tit-lark: That, according to the aforeſaid Computation, there were deſtroyed by theſe twenty-one Neſts, in one Week's time, 70,560 Caterpillers: And that the Singing and Sight of the different Bodies and Colours

Colours of ſmall Birds heighten the Pleaſures of a Country Life.——Now, moſt of this Gentleman's Obſervations, I agree, carry with them a great deal of Reaſon; nor have I any thing to object, but what he writes of the great Service that Sparrows do, without Exception: It ſeems to me, that he had not a Notion of the Damage that Sparrows do in and about Farm-houſes, Barns, Stables, and Out-houſes: If he had, I preſume, he would have thought it neceſſary to take notice of the Miſchiefs they do here. In a Garden, indeed, there is ſeldom ſo much Grain ſown, and let ſtand to be ripe, that they can do much Damage; but the Service they do, in devouring Inſects, as this Gentleman obſerves, may more than balance the Damage: But their Breeding in and about a Farm-houſe, Barn, Stable, and Out-houſe, is a different Caſe; for as they are, by his own Account, Birds that build more Neſts about theſe Places than any other Bird, and have three or four Neſts in one Summer, their Increaſe is beyond all other Birds; and, if they do a Farmer more Miſchief than any of the winged Tribe, the Damage muſt be the greater: And ſo it is with the Sparrow; for when theſe build about a Farm-yard, they don't confine their Search after Inſects; no, they have here Variety of more ſubſtantial Food, as Wheat, Barley, Oats, *&c.* Theſe are their beloved Meats, that we generally find in their Crops, or Stomachs, after killing them: And although they may bring Inſects to feed their Young with, in their tender unfledged Condition; yet, as ſoon as their Bodies become robuſt enough to digeſt Grain, they are not wanting to feed on the ſame; and which, to mine and all the Farmers Coſt in our Parts, we find to be too true throughout, or almoſt throughout, the whole Year; and which we cannot well hinder, ſo long as they have

Liberty

Liberty to fly; becauſe there are few, and very few, Barns ſo cloſe-boarded, but what the Sparrows can get into; and ſo into many Granaries, Ricks, and Stacks of Grain, where theſe Arch-Thieves find Opportunity to pillage from the Farmer: But, where no Wheat, Barley, or Oats are to be had, the Sparrows are not capable of doing ſo much Harm; if they were, the *Londoners* would not increaſe their Breed, by fixing earthen Bottles againſt the Sides of Walls, for them to breed in; as I have ſeen done, to the Number of, I believe, twenty Bottles at one Houſe: Nor would a Gardener, I ſuppoſe, ſuffer ſeven Neſts of Sparrows in a Barn, Stable, and Houſe, if he was to ſuſtain as much Loſs by them, as a Farmer does, both at home and abroad. Our Church, that ſtands about a Quarter of a Mile from any Houſe, is ſeldom without one or more Neſts of Sparrows in the Summer-time. Here, indeed, they live chiefly on Inſects, becauſe they have no Corn near them, till the Rye, Wheat, or Barley, gets into Ear; and then, as ſoon as the Kernels become fit for their Turn, they will bear themſelves on the Flutter of their Wings, while they peck their Meat out of the upright Ears: And I am apt to believe, that that Gardener, who quietly ſuffers Sparrows to breed in and about his Houſe, when it is in his Power to deſtroy them, is ignorant of a great deal of the Miſchief they do, even in a Garden; for I can aſſure him, that the Sparrow ſcratches like a Dunghil-hen, to come at his Food, beyond all other ſmall Birds; and is worſe, in this reſpect, than the Rook, that is ſaid to employ only his Beak to come at his Meat: Nor do I know of any other ſmall Bird that ſcratches for his Victuals, beſides the Sparrow: He muſt, therefore, conſequently, devour great Numbers of Seeds, preſently after they are ſown, and raked or harrowed

into

into the Ground: But ſome keep the Sparrow tame in a Cage, for the ſake of his learning to talk, and ſing the Note of another Bird, hung by him from the time of his being taken out of the Neſt.

How to deſtroy both old and young Sparrows.——Dr. *Warder* is very right in ſaying Sparrows Neſts are beſt deſtroyed by Boys, becauſe it is a pleaſant Sport for them to climb and take them out of their Holes; and the more ſo, if a few Farthings are given them as an Encouragement to do the ſame: But he is wanting to give another neceſſary Piece of Advice; and that is, That the Boys, on taking out a Sparrow's Neſt, ſhould always totally deſtroy the Neſt; which they ſeldom or never do, but throw it down, and leave it on the Ground where it fell; and then the Sparrows are ſaved a great deal of Time and Labour in getting Materials for building a new Neſt; for the old one being near, they immediately fall to work, and remount it Piece by Piece, till they have replaced it in its former, or ſome ſurer Situation. I know an old Woman in my Neighbourhood, who, becauſe ſhe rents a Tenement next a Farm-yard, and can hardly lay any Bread near the Back-door of her Houſe, but the Sparrows are ready to come in and eat of it, takes particular Care to gather up all the Sparrows Neſts that the Boys pull out, and burn them, to hinder the Sparrows uſing them again; and ſhe declared to me, ſhe has gather'd Lapfuls of ſuch Neſts in her time, and burnt them all. This is one Way of deſtroying Sparrows: But as many of theſe ſubtle Creatures build in very high Trees and Houſes, their Neſts are inacceſſible; and ſo in lower Places their Neſts ſometimes lie ſo far in, that they can't be come at with the Hand. In theſe Caſes the Sparrow-net is wanted; of which there are ſeveral Sorts, that I ſhall omit writing

of, except one; and that is the common Clap, or Bat Fowling-net, that we buy for Half-a-crown ready fixed on Poles, and completely made for Uſe. This Net a Man holds in his Hands very early in a Morning, or very late in the Evening, when the old Birds are in their Neſts, in this Month, or any other; and if the Neſt is too high to reach with the Net from the Ground, we get a Ladder, and hold it againſt the Eaves of Houſes, Barns, Dove-houſes, and ſuch-like Places, as alſo againſt Stacks of Corn or Hay; and if they were thatched, it would be better; and, being ſet cloſe againſt them, to knock and make a Noiſe to force them to fly out into the Net.——Thus I have deſtroyed great Numbers of Sparrows, both in Winter and Summer, by the Bat Fowling-net, which I always keep by me; and is moſtly made uſe of by my leaſt Son and Servant, to whom I give Two-pence a Dozen for all the Sparrows they bring me; and yet can't deſtroy them ſo much, but that I have a great deal of Damage done by them every Year, which indeed makes me write with ſome Inveteracy againſt the Sparrow; for whoſe Deſtruction I not only keep a Net, but alſo a Trap-cage, which when furniſhed with another Sparrow, by way of a Decoy, I leſſen the Number of ſome of their Tribe; and ſo my Boy does by a Fall-trap, ſet on a Tree or Hedge, a Pail or Wall, that is made with four Bricks ſet up Edge-ways in the Form of a Square, almoſt cloſe together, with a ſquare Tile on the Top, and two or three Bits of Sticks in the Inſide of the hollow Square. Here, by laying a little Corn on the Outſide of the Trap, and ſome within-ſide, the Sparrows are invited to ſettle on a Trigger-ſtick, and ſo are catched by the Fall of the Tile: But this is chiefly a Winter-Trap. To which may be added Lime-twigs, laid at or near the Places

where Sparrows uſually ſettle; and, by theſe, Boys ſometimes catch them, to their great Diverſion, and the Farmer's Benefit. The beſt Uſe that Sparrows can be put to, that I know of, is, to bake them in a Pye, with or without little Bits of Bacon among them: This Sort of Pye I have eaten of at a Gentleman's Table; and is deemed a reſtorative Food for weak Perſons, dreſſed in this or ſome other Form. —— As to Mr. *Mortimer*'s wiſhing for a Law for extirpating ſeveral Tribes of ſmall Birds, there was a Law made, I ſuppoſe in Queen *Elizabeth*'s Time, for obliging all Church-wardens to pay (if I miſtake not) Two-pence a Dozen to any Perſon who ſhould bring to them ſo many Heads of Sparrows; which Law, as it remains in Force at this Day, as well as others, for encouraging the Deſtruction of the Pole-cat, Hedghog, Fox, *&c.* a Perſon may oblige the Pariſh Officers (if they refuſe) to pay them this Money, ſo appointed by Act of Parliament, by a Warrant from a Juſtice of Peace. I ſhall conclude this Subject or Hiſtory of the Sparrow, with the following Account.

How a Boy uſed to rob Houſes by means of a tame Sparrow. ——— I have read of an arch Thief, that was very young in Years, but an old Practitioner in the horrid Wickedneſs of Thievery; for, it is recorded, he had ſtole at times to the Value of five hundred Pounds. His Name was *Rawdry Audry*, who, under ſixteen Years of Age, after having been ſeveral times in *Newgate*, tried and convicted for ſeveral Crimes, and, after a little ſuffering for them, diſcharged, was at laſt condemned to die for a Robbery, and hang'd at *Tyburn*. Now one Sort of his Robberies was performed in this Manner: He uſed to get a young Sparrow, and learn it to fly from and to his Fiſt; and, when he had duly qualified the Bird for his Purpoſe, he look'd

out

out at a proper Time of Day in ſome of the *London* Streets, for a Saſh-window being ſet open in the Heat of Summer (as many then uſually are, to let a cool Air into the Room): When he had met with one, where a Side-board was furniſhed with Plate, he would ſo order it, that the Sparrow flew into the Room; and then he immediately knocked at the Door, and, with a very humble Air, pray'd the Servant to let him come in, to get his Sparrow: The Maid or Man-ſervant, ſeeing a Boy with a fair Excuſe, had no Suſpicion of his foul Intent; and therefore let him freely into the Room; where he ſo cleverly acted the Legerde-main Artiſt, as ſeldom to leave the Place, without bringing off a Piece of Plate.

CHAP. XIX.

Of the Damage of Pigeons.

HOW a Farmer had a Four-acre Field of blue Peas intirely ruined by Dove-pigeons.—One Mr. *Pope*, a Farmer, living in the Pariſh of *Berkhamſtead St. Peter's*, in *Hertfordſhire*, had an incloſed Field of four or five Acres, that, in *April*, he ſowed with blue Peas in the Random-way; and they grew well, till, in this Month, they were attacked by ſeveral Flocks of Dove-pigeons, that were kept by Gentlemen in the neighbouring Parts of this Country: And, as the Peas were about four or five Inches high, they fell to work; and, greedy of this green Prey, they eat the Heads of the Peas ſo clean off, that they were intirely ſpoiled for a Crop; inſomuch that the Farmer thought it the beſt Husbandry to turn his Horſes into the ſame Field, to eat up the Stalks which the Pigeons left:

So that this ſame Farmer was forced to buy the green and ripe Peas that he uſed for his Family the reſt of the Year. This Loſs happened in 1742. And when the Farmer (whom I knew) was asked by his Friends, if he had any Recompence made from the Owners of the Pigeons; he ſaid, No; nor dared to kill them, leſt he incurred the Penalty of the Act, and paid five Pounds for ſhooting each Pigeon. To ſave me the Labour of commenting upon this Farmer's Hardſhip, in thus ſuffering by Pigeons, I ſhall recite what Mr. *Worlidge* has ingeniouſly written on this Subject; who, though he only takes notice of their deſtroying Grain, and not the green Heads of Peas; yet has touched this Matter, in the main, ſo well, that, I I am ſure, his more learned Pen has done it better than I could.——Pigeons, he ſays, are a Fowl that bring great Advantage to their Owners; but prove a far greater Annoyance, and Devourer of Grain, to all the reſt of the Neighbourhood: It is an unknown Quantity of Wheat, Barley, Peas, *&c.* that theſe devour; not to mention the prodigious Computation that ſome have made of the Damage committed by them on the Corn, Grain, *&c.* Yet it is moſt evident, that they deſtroy a great Part of the Seed and Crop: Notwithſtanding, ſeveral ſtand for their Vindication, alleging, that they never ſcrape; and, therefore, take only the Grain that lies on the Surface of the Earth, that would otherwiſe be deſtroyed, and not grow. To which I anſwer, That that very Corn that lies on the Surface, may prove the beſt Corn, unleſs (in Winter-corn) where the extreme Froſts deſtroy it, or (in the Spring) the extreme Drought; it haveing been, of late, found to be a Piece of very good Husbandry, in ſome light and ſhallow Lands, firſt to plow it about *Auguſt*; and then to run the Fold over it, and well ſettle it; and, afterwards,

to

to ſow and harrow it; which muſt needs make well for the Pigeons, and ill for the Husbandman, where they cannot be kept from it.

And it is to be obſerved, where the Flight of Pigeons fall, there they fill themſelves, and away; and return again where they firſt roſe; and ſo proceed over a whole Piece of Ground, if they like it: Although you cannot obſerve any Grain above the Ground, they know how to find it; as I have ſeen the Experience of it, that a Piece of about two or three Acres being ſown with Peas, the Pigeons lay ſo much upon it, that they devoured, at leaſt, three Parts in four of it; which, I am ſure, could not be all above the Surface of the Ground: That their Smelling is their principal Director, I have alſo obſerved; having ſown a ſmall Plat of Peas in my Garden near a Pigeon-houſe, and very well covered them, that not a Pea appeared above Ground. In a few Days, a Parcel of Pigeons were hard at work, in diſcovering this hidden Treaſure; and in a ſhort time, of about two Quarts, I had not above two or three Peas left; for what they could not find before, they found when the Buds appeared; notwithſtanding they were hoed in, and well covered: Their Smelling only directed them, as I ſuppoſed, becauſe they followed the Ranges exactly.

The Injury they do at Harveſt on the Peas, Vetches, *&c.* I hope none can excuſe; therefore we account theſe amongſt the great Enemies the poor Husbandman meets withal; and the greater, becauſe he may not erect a Pigeon-houſe, whereby to have a Share of his own Spoils; none but the Rich being permitted ſo great a Privilege; and alſo, ſo ſevere a Law being made to protect theſe winged Thieves, that a Man cannot *ſuum defendendo*, encounter with them.

You have, therefore, no Remedy againſt them, but to affright them away by Noiſes, or ſuch-like: Alſo, you may ſhoot at them, ſo that you kill them not; or you may (if you can) take them in a Net, cut off their Tails, and let them go; by which Means, you will impound them: For when they are in their Houſes, they cannot bolt or fly out of the Tops of their Houſes, but by the Strength of their Tails; which, when they are weakened, they remain Priſoners at home.

How to prevent the Damage of Pigeons.——Scare-crows, Noiſes, nor even Shooting, without Killing, are capable of keeping off Pigeons from devouring new-ſown Grain, or the young, tender green Heads of Peas, when they are two, three, or four Inches high; for theſe are ſuch bold, audacious, domeſtic Fowls, that none of theſe Inventions will prevent their Miſchief; and the leſs, becauſe, at this Time of the Year, a Pea-crop is generally in its infant, tempting Growth, with green Heads, when the Pigeons have hardly any other Field-meat beſides, except the Seeds of Bent-graſs; which occaſioned the old Verſe:

The Pigeon never knows more Woe,
Than when he does a Benting go.

And, as very few of their Owners give them any Meat at home at this time of the Year, they are the more voracious in devouring any they can get abroad in Fields and Gardens; which ſo exaſperated Mr. *Worlidge*, by the Loſs he ſuſtained by them in his Garden, that he has publiſhed ſeveral Secrets to intoxicate, and take Pigeons, *&c.*

Firſt Receipt for intoxicating Fowls. ——— Take a Peck, or leſſer Quantity, of Wheat, Rye, Barley, Peas, or Tares; to which put two or three Handfuls of *Nux Vomica*, and boil them well in running Water,

Water, until they are almoſt ready to burſt; then take it off the Fire; and, when they are cold, ſtrew them upon the Land, where you deſign to take the Fowl; and ſuch as eat thereof will immediately be intoxicated, and lie as if dead; ſo that they may take them up at Pleaſure, provided you ſtay not too long; for the Dizzineſs will not laſt long upon them; therefore be near at hand: And it were not amiſs to kill them preſently, and take out their Entrails, although there is no great Danger in it.

Second Receipt. — As the greater Sort of Land-Fowl are thus taken, ſo may you take ſmall Birds; only with this Alteration, that, inſtead of Wheat, Peas, or the like Grain, you uſe Hemp-ſeed, Rape-ſeed, or Canary-ſeed; but, above all, Muſtard-ſeed.

Third Receipt. —— If you approve not of *Nux Vomica* (that is ſold at the Druggiſts), you may boil the ſaid Grains or Seeds in the Lees of Wine (the ſtronger the better), as you did in the running Water, and apply them to Uſe, as aforeſaid, and it will work the ſame Effect; and ſo in Gin or Brandy, being eſteemed more wholſome, having nothing of that poiſonous Nature in it; but, in an Hour or two, the Fumes will be perfectly wrought off.

Fourth Receipt. —— Inſtead of boiling the ſaid Grains or Seeds in the Lees of Wine, you may ſteep them therein; but then you will require a longer time before they are ſufficiently ſwoln, and fit for Uſe.

Fifth Receipt. —— I knew an old Farmer, that lived by me, practiſed this Method to keep off Pigeons, Crows, Rooks, and ſuch-like Fowls, from doing him Damage in his Fields. He took a Parcel of Pins, and crooked them; then fixed a white Pea to each Pin, in ſuch a manner, that the

the Pigeon, Rook, or Crow, could not perceive the Point. When this was done, he tied each Pin's Head to a ſtrong Thread, and faſtened that in the Ground to a Stick; then, when he had taken ſome Rooks, he would pull them Limb from Limb, after killing them, and ſcatter the Pieces about the Field, which became ſuch a Terror to the reſt, that he ſuffered little Damage from Field Fowls.

Sixth Receipt. ——— Or, inſtead of *Nux Vomica*, or Lees of Wine, you may infuſe the ſaid Grains or Seeds in the Juice of Hemlock; mix therein the Seeds of Henbane and Poppy, or either of them. Theſe muſt ſtand two or three Days infuſing, before they are fit to ſtrew on the Ground, for the Uſe as aforeſaid. To theſe I might add other deſtructive Receipts; but enough of this at preſent; and, therefore, I ſhall haſten to inlarge further on the Damage of Pigeons.

How many Chelturne *Farmers think it excellent Husbandry to mow or feed a Clover-crop two Years, and then give the ſame Land one Ploughing and Harrow in Wheat, that in this Form often ſuffers by Pigeons.* ——— In our *Chelturne* Country of *Hertfordſhire*, it is a common Practice with many of us, to let ſome of our incloſed Fields lie under Clover-crops two Years together, for our greater Conveniency; and, if we manure the ſecond Year's Clover-crop with Coal-aſhes, Soot, or Dung, we then give the ſame Ground, in the Month of *September*, only one Ploughing and Harrow for Wheat, without any further Application of any Manure. But the beſt way of dreſſing ſuch new-ſown Wheat (if the ſame Ground was not manured in the laſt Summer) is to fold it; for, by this, the Wheat is trod in by the Sheep, and thus preſerved in the beſt manner from the devouring Pigeons: Yet, even here, they will come

in for their Share. But as but Part of the Ground can be folded on, the reſt is either dreſſed by Dung, laid on the Surface as ſoon as the Wheat is ſown, or elſe ſooted in the Spring Seaſon; and either way, for the moſt part, produces the biggeſt of Crops, except when Flocks of Pigeons have their full Acceſs at Pleaſure to feed on the new-ſown Wheat, that by this Piece of Husbandry lies on the Surface, and ſo expoſed to theſe Fowls, that, when they can feed here undiſturbed, they generally eat ſo much of the Seed, as cauſes the Husbandman to enjoy a thin Crop at Harveſt, and a little Profit the reſt of the Year; which Article, among many others, ſhews the Excellency of the Drill-plough, that lays in the Wheat-ſeed in the exacteſt Manner of Depth and Breadth, and, at the ſame time, ſecures it from the nice Search and Find of the laborious Pigeon. This Pigeon-Miſchief, I, and Thouſands more, have Reaſon to complain of, from the great Flocks that Gentlemen keep: Yet theſe do not ſo much provoke us, as the many Houſe-Pigeons, kept by inferior Perſons; of which I ſhall take Notice as follows; *viz.*

How Wheat-ſeed only harrowed into the Ground on a Clover-lay, is ſometimes very much damaged by Houſe-Pigeons, kept by inferior Perſons. — Although the Farmer's Damage is ſometimes very great by the Flocks of breeding hungry Dove-Pigeons, kept by Landlords, or their Tenants, yet we do not ſo much regret our Loſs by them, as we do by thoſe Houſe-Pigeons kept by inferior Perſons. I knew a Hedger and Ditcher keep about forty Pair of theſe Houſe-Pigeons, in a Part of his Cottage, which was ſurrounded with many brave, large, incloſed Fields of good Land, where they got their Living almoſt all the Year, eſpecially in Seed-time and Harveſt; for then they work'd in

theſe, their chief breeding Seaſons, with the utmoſt Diligence, on the new-ſown Seeds, and on the Ears of ripe Corn: But here we ſuffer in a great Degree, when Wheat, Barley, or Oat, by the Greatneſs of their Bulk, fall down, and are laid before Harveſt; for, by this means, the Grain lying in a flat Condition, they have an eaſy Acceſs to their Food, and devour great Quantities of it in a little Time: And the ſame, when Stocks of Wheat ſtand in diſtant Fields, where we are obliged ſometimes, through the Wetneſs of the Weather, to let them ſtand here for three Weeks before we can houſe them; and then the Pigeons plunder us with a Witneſs, by feeding on the Corns of Wheat as they ſtand in Sheaves. I likewiſe knew another, that was a Chair-maker, who rented a Houſe and large Orchard for five Pounds a Year, keep forty Pair of Houſe-Pigeons, that did the Country about him a great deal of Damage; as I (for one) have juſt Reaſon to ſay. But this is only Part of a Farmer's Sufferings; we have our Wood-ſtealers by Day and by Night, that pull Stakes, and other Wood, from out of our Hedges, for Firing, and other Uſes, and thereby leave behind them ſuch Gaps, as ſometime let a Neighbour's Cattle into a Field, and then Pounding and Reparation-money generally enſues, to the Amount perhaps of ſeveral Pounds. At other times, in our incloſed Fields, that lie at ſome Diſtance from our Houſes, there are ſome that take the Opportunity, in the Night-time, to feed their Horſes, *&c.* in other Mens Grounds, while the Farmer and his Men are aſleep; and ſo in Harveſt-time, while our Shocks of Wheat are ſtanding in the Fields to dry and harden their Kernels, there are Night Pilferers, who take a little from every Sheaf, to prevent the Farmer's miſſing any, and thus carry off great Quantities,

well knowing, that the laſt Day's hard Work lays Maſter and Men in a profound Sleep, and thereby ſecures theſe ſort of Thieves from the Danger of being diſcovered and apprehended. Theſe, our Fruits, and many other valuable Goods, we Farmers are expoſe to the Loſs of; and the more, as ſome of the poorer Sort, Men, Women, and Children, think themſelves ſcreened from the Penalty of the Law; becauſe, if we puniſh the Man or the Woman with a Gaol and Proſecution, the next Word is, The Pariſh muſt maintain our Family. And thus they are encouraged to go on committing their Rapine every Year, till they break ſome of the weaker Tenants; as I have known done; and which I cannot think of without a deep Concern, as being very ſenſible of the hard Labour, early and late Watchings, and the great and certain Expences that attend a Farmer's uncertain Profits in his Crops of Corn, his Graſs, his Cattle, his Fruits, his Servants, and many more Incidents that he is conſtantly liable to get or loſe by: And yet to have his Goods ſtolen oftentimes, even by thoſe he employs, or helps to maintain by a Pariſh Rate, is not only hard to the Pocket, but extreme grievous to the Mind: Wherefore, as Landlords of Farms value prompt Payments of their Rents, and would have their Land improved, I humbly recommend to their Conſideration theſe Tenant-Hardſhips, and particularly to the Conſideration of thoſe who ſit at the Helm of the Nation's Affairs, that they would make ſome good and wholſome Laws in Favour of Tenants, to the utter Diſcouragement of Pilferers, either Men, Women, or Children: I mention Children, becauſe I have often known theſe to be made an Handle of by their wicked Parents, who ſteal where they themſelves dare not; believing, that, if they are catched in a thieving

Act, their infant Age protects them againſt a Proſecution; and ſo are made to become a ſort of Jackcalls, or Providers of Prey, to their Fathers and Mothers, and the reſt of their Family. And thus, indeed, a Succeſſion of Thieves are intailed and increaſed on the Country; and which, very probably, will hereafter be of the laſt ill Conſequence to it, if not prevented in Time. Which leads me to obſerve further, that there is a fundamental Tendency to this Wickedneſs, and to Profaneneſs and Immorality in general, reigning in many Pariſhes, through the Neglect of Divine Worſhip being performed Morning and Afternoon therein; which, in my ſeveral Years Travels, I have obſerved, with a grievous Heart, to ſee Church Doors ſhut up on a *Sunday*, where there was no reſident Miniſter, that occaſioned only one Service to be done on the Sabbath Day. This I was told, in one Pariſh, prevented ſeveral of their Women going to Church, becauſe in a Morning they ſtaid at Home to dreſs Dinner; and, in the Afternoon, becauſe the Miniſter officiated in another Pariſh: Farmers Children, and Servants, are alſo, by this means, tempted to ſeek out an Opportunity to play, and run into the Commiſſion of thoſe Evils, which, by Cuſtom, may prove their Ruin, for want of Opportunities to ſpend their Time better at Church, both in the Morning and Afternoon, on Sabbath Days. This is a Matter of great Importance, and calls for a particular Regard; for, as Farmers are a very numerous People, and employ the moſt Servants of all others, if theſe are corrupted in their Manners, they will conſequently become Spreaders of Vice, a Torment to their Maſters, and too often Helpers to their Ruin.

CHAP.

CHAP. XX.

Of the Improvement of Eſtates.

HOW a Tenant, by his Ill-husbandry, did a great deal of Damage to a Lady's large Farm; and the Method ſhe took to repair the ſame. ——— But, firſt, I ſhall inſert the Copy of the Lady's Letter ſent to me for this Purpoſe; which is as followeth:

SIR, *May* 19th, 1744.

HAVING read your Books of Improvements, and I having a Country Seat, that I want to have improved, I ſhould be glad to have your Advice. So, if your Convenience could allow you to come to *London* ſome time next Week, it would be a Favour done me. So you'll pleaſe to inquire for the Counteſs of ——— in ——— *ſtreet*, in *St. James's* ———, *London*. Which is all,

From your Friend.

I waited on this Lady accordingly; when ſhe told me how her Tenant had abuſed her Farm, and obliged her to take it into her Hands; and that, for repairing and improving it, ſhe was fully reſolved to act by my Directions. To this Purpoſe, I propoſed to her, in the firſt Place, that it was perfectly neceſſary for her to have a Ploughman that could hold the Drill, or any other Plough, could ſow any manner of Seeds, mow, reap, plaſh Hedges, ſuckle Houſe-Lambs, and do moſt, or all other Buſineſs belonging to Farming. To which ſhe anſwer'd, ſhe believed what I ſaid to be right; but that all this would not anſwer her Purpoſe, unleſs the Ploughman could write, and caſt Accounts; foraſmuch as he muſt be the

the chief Manager of the Farm, be accountable for the Receipts and Iſſues thereof, and, in her Abſence, write Letters to her of his Proceedings. But, as it happened, Viſitors came in; and I was forced to withdraw, before I had time to acquaint her Ladyſhip with farther Particulars on this Subject; which to ſupply, I wrote her the Copy of the following Letter.

Little Gaddeſden, 27th of *May* 1744.

MADAM,

YEſterday I heard of a Ploughman, that is well-skilled in holding our *Hertfordſhire* Ploughs, in Sowing, Mowing, Reaping; and can perform that uſeful Branch of Husbandry, which your Ladyſhip ſo particularly inſiſted on, the Planting and Plaſhing of Hedges; can write, and underſtands Figures well; but is not acquainted with the Drill-plough, Horſe-break, and ſome other Inſtruments, as being what he never ſaw: Nor can I expect to meet with one that is; becauſe theſe two Machines are not yet known in that Part of the Country he lives in; nor, indeed, but in very few Parts beſides: For a new Invention in Husbandry, though of ever ſo great Importance to a Farmer's Intereſt, is ſure to make its Way with the utmoſt Slowneſs; for theſe Sort of Men, more than any other, are very jealous of new Improvements in Husbandry, leſt they be led into Miſtakes, to their Prejudice; knowing, that a Miſcarriage may hurt a weak Pocket: Therefore it is almoſt a general Rule among Tenants, to forbear trying any new Project in the Farming Way, till its Benefits appear ſo glaring, that there is no Room left to doubt of its Uſefulneſs: And therefore, in ſuch a Caſe, they wait for a Proof, by the Trials of rich Perſons; for, ſay they, if a new Invention ſhould miſcarry

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in their Hands, it will not hurt them, when it will us. But, to ſupply this Defect in this Ploughman, if you think fit to hire him when you ſee him, your Ladyſhip, and all Perſons that employ me in theſe Affairs, have this Opportunity; *viz.* to have them qualified to hold the Drill-plough, Horſe-break, and other new and moſt valuable Inſtruments, in three Days time; which is a Service that none ought to grudge paying a Trifle extraordinary for: Though on this account I charge nothing for the bare learning ſuch a Ploughman to uſe theſe profitable Implements, nor for teaching him the Art of ſuckling Houſe-Lambs, and other Matters that he may not know before, and yet be juſtly deemed a good Ploughman and Manager in the old Husbandry: And, when ſuch a Ploughman is made a Maſter of this Knowlege, how ſerviceable muſt he be to a Perſon he is hired to ſerve; particularly to one in your Ladyſhip's Caſe, whoſe Seat lying remote from *London*, your People muſt conſequently be the more ignorant, even of the beſt Management in the common Way of Farming! Therefore, to look into the Advantages *de futuro*, I have to remark, that, by your haveing ſuch a Ploughman ſo qualified, your Eſtate may not only be vaſtly improved by his Skill, but his Example will teach others of your Servants to do the ſame Work; ſo that, if a Diſlike in you, or him, ſhould happen, and he is diſcharged from your Service, you will not be left at a Nonplus, but be able to carry on the Husbandry Buſineſs in as great Perfection as before. Hence I am led to obſerve, that a little extraordinary Wages given to ſuch a well-qualified Ploughman is ſo far from being loſt, that it is very likely to be the beſt Money that can be laid out in ſuch an Undertaking as yours: For Encouragement, in this Caſe, ſometimes does Wonders; it may prevent his hindering,

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as much as lies in him, to learn others his Art by his Example: On the contrary, in hopes of enjoying, a long time, the Place of ſuch a generous Maſter or Miſtreſs, he freely goes on, without Jealouſy of being treated as a Tool to learn others, and then be turned off. It may engage him to the greater Diligence and Faithfulneſs: And, in ſhort, by thus encouraging the chief and beſt Servant, he will be tempted not only to uſe his beſt Endeavours to promote your Intereſt, by his own Care and Labour; but, by acting the Superviſor, will ſee it done by all others under him. By all which, I don't in the leaſt doubt, but that your large Farm, though much impaired at preſent, will be ſoon brought into a moſt fertile Condition; and the ſooner, as you ſay it has Variety of Soils, is moſtly incloſed, and lies near the Sea-ſide; which Conveniency, in many Places, furniſhes Ore, or Sea-weed, Shells, Sand, or Mud; all or any of which is ſome of the beſt of Dreſſings for the Improvement of any Sort of Land whatſoever, that ſtands in need of Dreſſing. In ſhort, as your Ladyſhip is well known to be Miſtreſs of a ſuperior Genius to many of your Sex, and is reſolved to make uſe of theſe new Inſtruments in a Country where they are Strangers to them, you will certainly reap a very great Profit, by thus being the firſt, in your Parts, that will hereby enjoy Crops of Grain, and other Vegetables, every Year in the ſame Fields, free of the uſual Loſs of Time in fallowing Seaſons; and with the leaſt Charge of Dreſſing, and Mens Labour; as are the ſincere Wiſhes of, MADAM,

Your Ladyſhip's moſt obedient humble Servant,
Wm. Ellis.

To which her Ladyſhip ſent me the following Anſwer:

SIR,

SIR, *London, May* the 31ſt, 1744.

I Had yours Yeſterday, and am glad to find you have heard of a Man that ſeems to pleaſe you: And, as I am not in a Hurry, and would have him go down along with me, which won't be till the firſt Week of *Auguſt*; ſo you will have Time to inform him in Things that you find him wanting; and what Ploughs will be proper to be ſent by Sea to ——— I ſhall be ready to take your Advice: And ever am, SIR,

Your aſſured Friend.

P. S. I ſhall go out of Town next Week to my Houſe at ——— near ——— in *Middleſex*: So if you direct for me there, your Letters will come ſafe.

This Lady's Conduct, as well as that of a few Gentlemens in *Britain* and *Ireland*, and ſome beyond the Seas, may juſtly upbraid moſt of our *Engliſh* Gentry, Owners of Eſtates; who, though many of them keep plough'd Lands in their own Hands, yet will not endeavour to improve them by the new-invented Drill-plough, Horſe-break, and other Inſtruments; notwithſtanding it is beyond Contradiction, that their proper Soils may be vaſtly improved by them; and, at the ſame time, become a good Example, for the ſame Purpoſe, to their Tenants: Which leads me to be ſomewhat particular in my Account (by way of Example for others to imitate) of this Lady's managing her Eſtate, *&c.*

How a Widow Lady improved her Eſtate. ——— This middle-aged Widow Lady I have juſt Reaſon to write of, to publiſh her excellent Conduct in the Management and Improvement of her Eſtate; hoping her Example may become prevalent for

others, even many of both Sexes, to imitate, for their great Benefit, as well as for that of the Nation in general. I never met with any Perſon more intent on the Improvement of an Eſtate, than this Lady was on her's; for when I firſt waited on her at *London*, to receive her Orders about it, ſhe told me, by the Recommendation of Sir ——— Baronet, ſhe had ſuch a Confidence in my Sincerity and Ability to adviſe her, that ſhe ſaid ſhe would leave to my Choice what Things I thought proper to buy, and ſend her, for improving that Part of her Eſtate which ſhe kept in her own Hands. This full Commiſſion induced me to do the beſt I could to ſerve her Ladyſhip's Intereſt: And, accordingly, in the firſt place, I helped her to one of the moſt complete Ploughmen in our Parts; who met her on the Road, in her Coach and ſix Horſes, in *Auguſt* 1744. for waiting on her to her Seat in the North. After this, as ſoon as I could, I put a Three-wheel Drill-plough, and a Horſe-break, ſix tame Pheaſants, ſix *Hertfordſhire* white Dunghil-fowls, and other Things, on board a Ship in the River *Thames*, for their being carried and conveyed to her Ladyſhip: And, when I can meet with ſome Turkey-pouts to my Mind, of the *Virginia* great Breed, that, at their full Growth, Guts and Feathers included, weigh forty Pounds each Turkey, I ſhall ſend them to her, with ſome other Curioſities, as Opportunity offers: For this Lady takes great Delight, and indeed makes it Part of her Buſineſs, to pry into, and inform her Judgment of, the lateſt and beſt Practice of Husbandry; and therefore very much encourages and receives Advice on this Account; buys Books, diligently ſtudies, and readily diſburſes her Money, for obtaining that great End of getting much in little; or, in plainer Words, making the moſt of that Part of her Eſtate ſhe holds in her own Hands; which

which ſhe has already vaſtly improved, by Plantations of Trees, Shrubs, and Hedges, *&c.* An Improvement that, in ſome Sort of Ground, exceeds all others; for where Corn, and other Vegetables, will not proſper, proper Kinds of Trees will: For which Reaſon, before any Perſons attempt to make large Plantations of Trees, they ought, in the firſt place, well to conſider what Trees will beſt ſuit their Soil; for, on a right Judgment of this, depends their future Proſperity: And this Lady has ſo wiſely conſulted this chief Article, that her great Numbers of young Trees are like to produce a vaſt Profit, againſt her only Son arrives at a Maturity of Age, when he may think fit, or may have Occaſion, to fell them, and turn them into Money. This is acting the good Guardian Mother, in a moſt exalted Degree of Husbandry; for, by this means, her minor Son (incapable as he is) loſeth no Time in the Improvement of his hereditary Eſtate, becauſe ſhe thus does it for him; and for which Poſterity, after her and him, very probably will have Reaſon to bleſs her Memory. It is this, and her other noble Oeconomy, that enables her to live great, both at home and abroad: At her Seat, becauſe it is a very convenient one, where ſhe has a full Number of Servants and Horſes, has a complete Dairy, makes her Cows ſuckle Calves, and her Ewes Houſe-Lambs; which, by a cloſe Inſpection into their Management, cauſes this Part of her Good-houſewifry to return conſiderable Profit: And this, partly by reaſon ſhe lives within three Miles of a large City, that gives her the beſt Opportunity to ſell her Butter, her Calves, and her Houſe-fatted Lambs, at a good Price; and much better, for her being the firſt Perſon, in her Part of the Country, that ever attempted ſuckling Houſe-Lambs for a common Market: And for which Art, ſhe is, in a great meaſure, beholden to

my Monthly Books of Directions, that ſhe ſtrictly obſerved; beſides conſulting me, in Perſon, at her Houſe; where I had the Honour to eat at her Table with her. But, for a farther Aſſurance of performing this new ſuckling Husbandry, I provided her a Ploughman that underſtood it; having lived in a Farm where this Buſineſs was carried on all the Year for a *London* Market, as well as plaſhing Hedges, ſowing, mowing, hoeing, and doing many other Works, in a far better Manner than moſt others; for this Servant, though a young Man, has been hired to, and ſerved ſome of the moſt acute and opulent Farmers in our Country: And I muſt do her Ladyſhip this Juſtice, as to ſay, ſhe is ſo well acquainted with the Value of ſuch a chief Servant, that ſhe did not grudge to give him even the Wages he asked. On this Account, Gentlemen, Ladies, and others, that think fit to employ me to help them to Ploughmen and Dairy-maid Servants, have the greateſt Chance to be provided with thoſe that beſt underſtand their Buſineſs; as I live in a County moſt famed for good Ploughmen; and on the Edge of *Aleſbury* Vale, where ſome of the moſt complete Dairy-maids are in Service, and whoſe Characters I am moſt likely to know. This Lady alſo kills her own Beef, Mutton, and Veal; and keeps ſome of the beſt Sort of Dunghil Hens and Cocks: For the Care of furniſhing herſelf with the moſt profitable Things of a Farm deſcended ſo low, as to injoin me to ſend her ſome of our beſt Sort of Dunghil Fowls: Ours, being all of a ſnow-white Colour, of a good Size, lay large thin-ſhell'd Eggs, that cauſe them to be hatch'd the ſooner; breed commonly three times in a Summer; which is a particular beneficial Quality to us Farmers, when we have Offal-corn in Plenty, for feeding and bringing-up great Numbers of ſuch fine white-legg'd Chickens, that ſell for the beſt

Prices

Prices at our Country Markets, and are careful good Nurſes of them. But more of theſe, when I write particularly on Dunghil Fowls, in ſome of my future Works : And now, as the better of theſe Fowls are as cheaply kept as a worſer Sort, it is great Imprudence in all thoſe who keep a worſer Sort in Neglect of a better. But before I quit this Subject of employing my Pen in the Praiſe of our *Hertfordſhire* Breed of Dunghil Fowls, I think it not amiſs to obſerve, that it is not of the leaſt Conſequence for all Perſons, who keep a Family in the Country, to take care of getting one or more Cocks that are good Crowers, becauſe on this, in a great Degree, depends the early riſing of Servants : Many of theſe regard the Crowing of a Cock ſo much, that they are the greateſt Part of the Year governed by it on this Account ; and where a Clock is not to be heard, ſuch Crowing ſupplies it : And I think I may ſay, I have a white Breed of Dunghil Cocks, that not only crow aloud, but muſical ; if I may make uſe of the old Woman's Term where I firſt bought them. And this deſerves the more Notice, ſince ſome Cocks Crows are ſo harſh and grating to the Ears, as makes it unpleaſant to be within the Hearing of them.

This Lady is likewiſe a moſt curious Manager in the Brewing of her Malt Liquors : She takes care, in the firſt place, to buy the beſt of Malt, as well knowing, without this, there is no ſuch thing as having right good Ale and Beer. But the Choice of Malt is a Secret that few underſtand ; and, to prevent their being impoſed on in this material Article, I muſt refer my Reader to *The London and Country Brewer* ; a Book that no Family in the King's Dominions ought to be without, becauſe by this Art Malt Liquors may be made to exceed thoſe commonly brewed, as Gold exceeds Silver,

Silver, and yet brewed for the ſame Charge the worſer Sort coſts. I am ſenſible there be many Gentlemen, and others, who would be glad to be informed of theſe two valuable Articles, becauſe ſuch brewed Ales and Beers are not only profitable, but very pleaſant and healthful, as being the chief and moſt natural Liquor of all others to a *Britiſh* Conſtitution. Now thoſe Perſons that have not this Book, may be informed of all this from me, provided their Letters are franked, or Poſtage paid for them, to my Houſe that lies thirty Miles from *London*; and I am paid for writing an Anſwer, for which very little is expected; for it is not reaſonable I ſhould do this for juſt nothing.

The next Thing that I am to praiſe this worthy Lady for, is, for her Skill and Diligence in making *Engliſh* Wines; of which Art ſhe is a great Miſtreſs. I heard her in particular ſay, that a Gooſberry Wine rightly made, and kept to a due Age, is one of our beſt *Britiſh* Sorts that can be made; which, and ſome others, ſhe is ſo much in Love with, that ſhe prefers them to ſeveral foreign Sorts. But I obſerved, that her Ladyſhip was not acquainted with a Black and Honey Cherry Wine; although, in my humble Opinion, theſe two, and the red and white Elder, exceed all others. The Reaſon of this, I preſume, was, becauſe in the Country, where this Lady lives, they have few or no Standard Cherry-trees: But, if they knew the Value of them, I don't doubt I ſhould not be long without ſeveral Commiſſions, to ſend many of them by Sea that are to have a long Carriage, and others nearer, by a Wheel-carriage, for the ſake of their delicious Fruit at Table, and making a Wine ſo nearly counterfeiting Claret, that I defy a nice Palate to diſtinguiſh between them, if made according to a particular Receipt I could give, in which ſome foreign Wine muſt be uſed. This

Black

Black Cherry Wine has the moſt cordial Property belonging to it of all our Tree Fruits; for, if a large Glaſs of it is drank, it preſently is felt at the Heart; and undoubtedly, by the Accounts of Naturaliſts, it is as wholſome, as it is reviving and pleaſant. In 1744. we had ſuch Plenty of Black and Honey Cherries, that I ſold my Kerroons at Nine-pence Halfpeny a dozen Pounds, and common Black for Five-pence; at laſt the Price fell to Four-pence Halfpeny a Dozen, and then Thouſands of Dozens were left ungathered, and fell to the Ground, where Hogs, Dogs, and Fowls, met with a Repaſt: A Pity, indeed, that ſuch noble Fruit ſhould be no more eſteemed! I am apt to believe it is for want of knowing its true Nature in ſeveral Shapes of its Virtue. The Black Cherry imitates Claret, as much as the Wine of the Honey Cherry does Sack or Canary, both in Colour and Taſte. If this be true (as certain it is), few, I ſhould think, would be without theſe two Wines in their Cellar, that can afford to make them. Twenty dozen Pounds of theſe would make a Barrel, or ſix-and-thirty Gallons of noble rich Wine, with the Help of Sugar or Raiſins, *&c.* the Expence of which may be the better borne, ſince theſe Cherries, when gathered in their full Ripeneſs, want not ſo much of theſe Ingredients as Currans, Damſens, and ſome other Sorts of *Engliſh* Fruits: Not that ſhe allows theſe *Britiſh* Liquors to hinder her the Uſe of foreign Wines; for ſhe, by the ſtudious and diligent Management of her domeſtic Affairs, improves her certain plentiful yearly Income ſo well, that ſhe can afford to buy theſe better than many other Perſons of Quality, and of which ſhe is a good Judge; for, after ſhe has bought a right Sort, ſhe well knows there muſt be a due Regard had afterwards to their Preſervation in the Cellar or Vault,

or elſe the beſt of Wines may loſe their prime Virtue. I had the Favour to taſt a paliſh-red Wine at her Ladyſhip's Country-houſe in *Middleſex*, that ſhe told me was three Years old, made at the *Cape of Good Hope* in *Africa*, and ſo delicious, that I could not forbear ſaying, It was more fit to be drank as a Dram than as a Glaſs of Wine: Beſides, as this Lady's Seat is ſituated near the Sea-ſide, ſhe enjoys the beſt Opportunity of buying foreign Wines, and good, at the cheapeſt Rates. Theſe, and many more Acts of Houſewifry, are practiſed by this Lady, who commonly, once in two or three Years, leads Part of her Life in *London*, and near it, in ſo magnificent a manner, that, as ſhe was pleaſed to obſerve to me over a Diſh of Tea, ſeveral of the Town and other Ladies, whoſe Eſtates lie much more Southward than her's does, have expreſs'd themſelves in a ſort of Wonder; ſaying, Sure, Madam, you muſt have an Eſtate of twenty thouſand Pounds a Year, to make ſuch a Figure as you do! To which her Ladyſhip's Anſwer uſually is, That ſhe has not an extraordinary great Eſtate, and yet may be called a plentiful one: But ſhe augments it when ſhe is at home in her Country, by practiſing the Huſbandry-part ſo well; that ſhe lives handſomely here, and yet lays by conſiderable Sums out of her Income, that ſhe had no Occaſion to expend; and therefore was the better able to live in the Order they ſee her when in *London*. This Anſwer to ſome of her Sex ſeemed a Myſtery; Strangers to what may be called Country Houſewifry! And, to be better informed of this Matter, they aſk her and ſay, Pray, Madam, what is this Sort of Huſbandry that you practiſe? She tells them, It is looking after my Land, and to ſee it well plowed and ſowed in due time; have my Corn and Hay cut down and houſed in

right Order; my Fruit put to the beſt Uſes; my Dairy carried on in right Order; my Beef, Sheep, Calves, and Lambs, fatted with Care and Art; my Cattle bought in, and ſold out, by an underſtanding Perſon; my Goods made the moſt of; and my Servants (that I ſpare no Coſt to get the beſt Sort of) employed with the leaſt Loſs of Time. This is only Part of this excellent Lady's Character, which ought to become a Mirror of Example for many others to follow and practiſe: Then there would not be ſo many Eſtates leſſened and ſold; Tradeſmen made to loſe their Debts; and Breaches happen in Matrimony, as ſo frequently now-a-days do. This reminds me of what I heard her Ladyſhip ſay, That as ſhe was looking out of her Window one Morning in *London*, ſhe ſaw a Couple of Fellows in the Street hankering about a particular Houſe: This moved her Curioſity to aſk her Footman what thoſe Fellows wanted there. He anſwered, That theſe were many of the *Engliſh* Gentry's Viſitors, that attended on their Levee, and coming out of Doors: That is to ſay, Madam, they are Bailiffs, that want to arreſt a Perſon that is now in that Houſe, for Debt, as ſoon as they can catch him out of it. And no wonder that this is the Caſe of many; for Good-huſbandry and Frugality are quite out of Faſhion, and he that goes about to ſet up for the Practice of it, muſt mortify every thing about him; for 'tis the Mode to live high, to ſpend more than we get, to neglect Trade, contemn Care and Concern, and go on without Forecaſt, or without Conſideration; and, in Conſequence, 'tis the Mode to go on to Extremity, to break, become Bankrupts, and Beggars. I am afraid this is but too juſt an Obſervation, that ſcarce one Family in ten keeps ſtrictly within the Compaſs of its Income: For, beſides the preſent

expenſive manner of Living, the Generality of Mankind have contracted ſuch an unuſual Indolence, that People, eagerly purſuing the Pleaſures and Novelties of the times, leave their Eſtates and Buſineſs of all Kinds at Sixes and Sevens, or at beſt to the Management of a few heedleſs mercenary Servants, that moſtly, either through Avarice or Negligence, betray or deceive them. But this Lady is not one of that Stamp: She delights in the Pen, employing it in keeping exact Accounts of her Receipts and Iſſues to come at a Balance; and therefore obliged me to hire a Ploughman that could write and figure well; which accordingly I did, and to whom, on his firſt Demand, ſhe gave 15 *l.* a Year Wages, tho' our common Ploughmen have but half the Money: So much Difference there is between a topping Ploughman, and an inferior one. But further; There is, ſays one, much to be ſaid to prove the great Town a Forge of Vanity, a Nurſery of Vice, a Snare to the Young, a Curſe to the Old, and a perpetual Spring of new Temptations. Some (ſays he) find a mighty Satisfaction from the Play-houſe, as thinking it the beſt way of paſſing an idle Hour or two: But here is ſuch a Confuſion and Jargon among them, and ſuch a Huddle of Men and Things jumbled together, that, unleſs you can abſtract the Good from the Bad, and withal drain Obſervations and Diverſions from them both, I cannot tell what kind of Pleaſure or Satisfaction you can propoſe from thence. 'Tis the very ſame in all the reſt of our pretended Diverſions; *viz.* Horſe-races, Cock-pits, Tennis-courts, Balls, Aſſemblées, and Muſical Entertainments, *&c.* Though the Recreations in themſelves may moſt of them be innocent and harmleſs enough, yet they are generally ſo vitiated and corrupted, and the Pleaſure that they pretend to, is ſo interwoven with Danger, as well as Vexation

Vexation of Spirit, that I defy the greateſt Maſter of the Town to make it appear, that there is not more Pain and Diſappointment, than there is real Pleaſure or Satisfaction, attending upon the beſt of them. But the Diverſions of the Country are noble, manly, and generous; and do not cloy or ſatiate their Profeſſors; but are ſtill improving upon them, and are, every Day, growing more grateful and delightful: They are not ſpent as thoſe of the Town are; but ſtill, the more they are enjoy'd, the more they pleaſe and gratify the Enjoyers. Moreover, to conſider the Expence of the Pleaſures of *London*, and thoſe of the Country, the latter are all free and open, and derived, as it were, from the general Grant of Nature; the former are mercenary, and not to be come at, without a certain unavoidable Charge and Danger: Beſides, all the Pleaſures of this Town may be run through in the narrow Compaſs of two or three ſhort Days; and, when that's done, you do but run the ſame fooliſh Round, tread the ſame Stage over and over again: And what can be more ungrateful to an ingenious Man, than to ſuffer his Senſes to be perpetually grated and impoſed upon, by the dull Repetition of the ſame Thing?

I therefore hereby give Notice to all Gentlemen, Ladies, and others, that, on a proper Order, I will furniſh them with Ploughmen, or other Men and Boy Servants, uſually employed in Husbandry Affairs; as alſo Grooms, Dairy and other Maid-ſervants; and buy for them Saddle, Coach and Cart-horſes, as I live near *Dunſtable*, *Leighton*, and *Alesbury*, where the beſt of theſe Sorts of Horſes are brought ſeveral times a Year to be ſold; as alſo Bulls, Cows, Sheep; the large *Leiceſterſhire*, or the ſmall foreign Breed of Hogs; Setting-Dogs, Gun-Dogs and Pointers, broke by the beſt Hands in our ſporting Country; Maſtiffs

and Shepherds Dogs; tame Rabbets of ſeveral Sorts, and *Guiney* Pigs; young Squirrels and Dormice, that are very plenty with us; tame Pheaſants of the common or white Sort, from Half-a-crown apiece to ſeven Shillings and Six-pence, according to their Age; *Guiney* Hens, white Peacocks, *Muſcovy* and others of the beſt *Engliſh* Sort of Ducks; the large *Virginia* Turkey, ſome of which have weighed forty Pounds, Feathers and Guts included; the true *Hertfordſhire* Breed of white Dunghil Cocks and Hens, that lay large Eggs with thin Shells, and have commonly two or three Broods of Chickens in a Year; divers Sorts of Wheat-ſeed, proper for particular Soils and Climates; rath-ripe, ſprat, and common Barley-ſeed; Oats of different Kinds; Tick and common Horſe-beans; various Sorts of Rouncivals, and ſmaller Peas, for Field or Garden Uſes; Turnep and artificial Graſs-ſeeds, and, the moſt excellent of all natural and artificial Graſs-ſeeds, that called the *Lady-finger* and *St. Timothy* Graſs-ſeeds; Fruit and Timber young Trees, and their Sets or Seeds; Hedge-wood Sets or Seeds; and all manner of Implements of Husbandry: So that Perſons may have the Three-wheel Drill-plough and Horſe-break, Two or One-wheel common Plough, the Swing and Foot-plough without Wheels, the Marſh or Bog-plough, the beſt and lighteſt ſort of Plough for cutting Water through; the profitable Chaff-cutting Engine; ſeveral Sorts of Inſtruments for improving Hop-grounds; with moſt or all Sorts of Utenſils uſually employed in Corn or Graſs Dairy-Farms; Furze or Whin-ſeeds, from our Commons; Beech-maſt or Seeds, or its Sets, at Eighteen-pence an Hundred; and Kerroon young Cherry-trees, of which particular Sort (being the beſt of black Cherries) I have a large Nurſery, and ſell them

them at one Shilling apiece; and which no Perſon ſhould be without, for its valuable Qualities, that has a convenient Place for their Growth.

CHAP. XXI.

The bad Husbandry of the Scotch *Farmer diſplay'd, in the Copy of the following Letter.*

SIR, *D——s, 11th Auguſt* 1744.

BEING Proprietor of ſome Lands, and regretting the Ill-conduct of my Countrymen, I purchaſed ſeveral Books of Husbandry; that of the Society of *Edinburgh*, and yours, *&c.* Both of them might be compendiſed; and it were to be wiſhed, that (as yours coſts us about thirty Shillings at this Diſtance) you had been more plain, and not reſerved ſo many Secrets, as the Method of preſerving Peas, *&c.* from the Slug, Fly, and other Inſects. However, as you have written more plain than any other, I eſteem you, and wiſh my Countrymen would follow your Directions: But, as I deſpair of that in haſte, I wiſh you could fall on a Way of ſending ſome of the good Farmers to us; rather, the Servants you ſend to Gentlemen. No doubt, this will ſeem a very whimſical, ridiculous Propoſal to you; and, I am ſenſible, there are no ſmall Difficulties lie in the Way: Yet, if Particulars were known, I am ſatisfied we ſhould have great Numbers ſpeedily; and all of them might make rich ſpeedily with Eaſe; which is the Reaſon, that (as I have expended a deal of Money on Improvements) I will beſtow a few Pence more for the Pleaſure of correſponding with Mr. *Ellis*; and hope he will excuſe the Trouble of hearing the bad Management of others.

Though

Though we have rich Grounds here, capable of bearing any Grain, all is on a wrong Footing; the ordinary Farmers have the Fields all open, take four Crops off the upper drieſt Parts of their Grounds, of poor, ſmall, grey Oats, not worth plowing for them, letting it lie only four Years Lee, without ſowing any Graſs-ſeeds: The Surface is ſcarce covered, till they give it a ſlight Folding, and then plow it four Years more. They only ſcratch the Surface five or ſix Inches deep; and are afraid of turning up freſh Mould, and will not plow a rich moiſt Ground, but call it a cold, ſour, barren Ground. They fallow none; but, through Lazineſs, lay their Dung on the Piece next the Houſe; which they call Croft; and take a Crop of Barley firſt; then one or two Crops of Oats; then dung again with Barley, Oats, *&c.* and ſo has been for Hundreds of Years. They ſow no Peas nor Wheat. Thus their Crofts are full of Weeds, and a dry Summer breaks Numbers of them. The Maſters, obſerving this, turned all their Grounds into large Incloſures of ſome Miles for feeding Cattle: A moſt precarious Trade! But, as it is better than the former, it is followed to ſuch a Pitch, that we have not Food amongſt ourſelves: Our Wheat is brought to us weekly thirty Miles from the Eaſt; and is carried alſo four-and-twenty or thirty Miles ſtill farther to the Weſt, to *Kilcoudbright*, *&c.* Our very Oatmeal comes weekly to our Market from the *Engliſh* Borders at twenty Miles Diſtance: And, though we have large Quantities of Milk, yet our Markets are ſupplied weekly with Butter from the *Engliſh* Side; and ſend many hundred Pounds for ſa't Butter and Cheeſe to your Sea Coaſts. In ſhort, to our Scandal, we had all ſtarved the laſt Dearth, but that we ſubſcribed, and ſent over, above three thouſand Pounds to the *Engliſh* Side, for Support of our Farmers, and the

Poor

Poor at this one Town. A great Number of the *Engliſh* Farmers, obſerving this, are come in on our Borders, and are making rich faſt. A poor induſtrious Fellow, of, I believe, not ſixty or ſeventy Pounds Stock, was laughed at, for taking a Piece of Ground called too dear; but he improved it ſo, that, in a few Years, he ſub-ſet leſs than the Half of it; and now his Family ſit Rent-free on the reſt. One from *Briſtol*, ſome Years ago, came over to *Galloway*, and made a great deal of Money; and many others. In ſhort, they will meet with great Encouragement from the Gentlemen here; and, particularly, it would be a Pleaſure to me, who have nine hundred *Engliſh* Statute-acres lying together, all Meadow and Arable: It is open to the South and Weſt, and covered from the North by Hills; the upper Parts of it are all a good Mould, mixed with a Clay four or five Feet deep; no Stones, ſave ſmall looſe Tumblers, which are all picked off to make Fences: The Meadow is a Foot of fine Mould, above a fine rich Clay and Moſs, without Sand, from three to fifteen Feet deep; and yields from fifteen to twenty Horſe-loads of fine Hay off a Day's Labour, without any coarſe Spret: Is juſt ſo ſituate, as never to carry off the Hay by Floods; and, if all the Meadows were ſaved, nine hundred Horſe-loads might be cut yearly, at ſixteen Stone *per* Load of Meadow Hay, beſides Clover. The Bogs are riſing Grounds, betwixt the Meadow and higher Grounds; a fine Turf, one Foot; then Clay (without Sand); and Marl, two, three, or four Feet, and, in ſome Places, five or ſix; which could be eaſily carried off: And, if the upper Turf were laid down, it would be Meadow all behind. We have a Privilege of caſting as many Peats as we pleaſe in a neighbour Moſs, on the Marſh, without any Reſtriction, but paying a ſmall Moſs-

due. Veſſels of thirty or forty Tons come within four Miles of it; and if one dine in *Cockermouth* or *Whitehaven*, they may ſup in the Farm. Several Butchers carry home fat Sheep, *&c.* in Boats: Nay, theſe two or three Years paſt, a cunning Farmer from *Kent* has come ſtealing down here, and buys Wethers at Six and Six-pence, or ſeven Shillings; which, he ſays, he can ſell, after a Year's Keeping, or leſs, at twenty Shillings, or a Guinea: Nay, we have Butchers all the Way from *Chicheſter* hither: So you ſee there is Money to be made here. The Farm is ten Miles from this, and fourteen from *Kilcoudbright*, all good Coach-road. A good Farmer could ſell all his Wheat and Peas to theſe two, cheaper than after fifty Miles Carriage; and Pork, which we have moſtly all from the *Engliſh* Side. There are ſome light Parts in the Farm; but there is always Plenty of Marl, or rich Clay, within thirty or forty ——— of it, to lead to it; and has ſuch a Command of Water, that the Half of it may be flooded all the Winter and Spring, and even in a dripping Summer. There are Plenty of Houſes, and good Farm-ones; but as I know an *Engliſhman* would not like them, if any offer'd, I would build right ones. It is a pleaſant Place, a good deal of Planting; and I am yearly planting more. Had I been bred in the Country, I would keep it all; but, having another Buſineſs, it lies out of my Way to manage it. I propoſe, therefore, to let it to three or four Farmers, each to be incloſed within himſelf; with Plenty of Water and Meadow, *&c.* If the Whole be taken together, I ask but four Shillings and Six-pence an Acre, in full of all Rent, Tythes, and public Dues; only ſome ſmall Caſualties, a few Hens and Chickens, or ſo. This for one Life; and I will yearly quarry, and build two or three hundred Poles of ſufficient Stone-walls, five Feet

Feet high; the Farmer Leading the Stones, when quarried, and paying ſeven and a half *per Cent.* for the Quarrying and Bigging; and if the Farmer give an Acknowlegement at Entry, he ſhall have Power to ſub-ſet; by which means he may live Rent-free himſelf in a few Years. If the Farm lay here, I could have thirty or forty Shillings or more each Acre, which is the uſual Rent here; but being ten Miles off, I ask but little leſs than the tenth Part of the Rent. The red-headed Thiſtle is growing on the Hills, which have not been plowed of a long time, and the common Thiſtle over it all: Common red and white Clover with Thetches grows plentifully in all the Grofts: The Out-fields are thick-ſet with what they call *Bennert* (ſmall Comfrey); and in *June*, at a Diſtance, the Fields look as if all covered with ſpilt Milk; which is from a Flower, for that reaſon called Milk-Graſs (Lamb-Lettuce); for it has now lain ſix or ſeven Years Lee. If any young Man were willing to puſh, you could not do a better Service to him than let him know of this, I can aſſure him; or rather three or four of them, of good Encouragement, if they are honeſt. Principles are no Objection to me. Here is a Meeting-houſe for Churchmen. You will be a better Judge what Stock it will require, than I. Every thing ſells dearer here than in your Markets, eſpecially Pork; Peas, Beans and Potatoes, and even Butchers Meat, dearer than moſt Places of *England*. —I'll beg you'll excuſe this long Scribble; and if any thing occur, favour me with a Line. You may obſerve, either in Print or otherwiſe, that there are cheap Farms in *Galloway*, or ſo; but I do not chuſe to have my Name made uſe of in public, or any notice taken of my writing you.—We have Plenty of Coals and Fir-timber, with Lime from *Whitehaven*. I have ſold a hundred and five Aſh and Plane-trees to two Lords there, who are to cut

them this Winter; and, if I were to build a Houſe, could have Fir Deals in Return. The Farmer may enter at *Martinmas*, *Candlemas*, or *Whitſuntide*, the 15th of *May*. The Meadows and Bogs are the richeſt of the Grounds; but, having never been plowed, would anſwer well for Wheat or Lint. The Quarrying and building Walls coſts me ſixteen or eighteen Pence *per* Pole. Thus you have every thing huddled in, as it occurred to,

SIR,

Your moſt obedient humble Servant;

Direct for me here. *though unknown.*

I will lett a larger or leſſer Part off at a Side, for the ſame Rent; for ſome dearer, as the Goodneſs is.

The Author's Remarks on the Scotch *Letter.*—— According to this ingenious Gentleman's Letter, it is plain, that a Perſon who underſtands the Farming Buſineſs, and is able to ſtock a Farm, and is willing to rent one in the South Part of *Scotland*, has here an extraordinary advantageous Opportunity to improve his Money; an Opportunity, perhaps, that is not to be match'd in *England:* And now is the Time to make the beſt of it; for the Knowlege and better Practice of Farming will certainly become more common than ever, in a few Years more: And when this Art is more known in *Scotland*, undoubtedly Farms will lett dearer than they do at preſent. Happy then is he, that ſooneſt takes one of theſe rich-landed Farms, at ſo ſmall a Rent as four Shillings and Six-pence an Acre! Land that with us would, in ſome Places, lett for twenty Shillings an Acre, without the great Conveniency of Marl-pits, which afford the beſt of Dreſſing for light Land: And, what is extreme valuable in this Gentleman's Eſtate, moſt of his Ground is of a ſtiff Nature; which would give a clever

clever Husbandman a fine Opportunity to get large Wheat and Bean Crops, where there was never any before: And every knowing Farmer is ſenſible of the great Value of freſh Ground, which here he may enjoy, not only becauſe Wheat was never ſown here before, but likewiſe becauſe he may, by a ſkilful deep Ploughing, make that Earth turn and be uppermoſt to the Sun, that never was yet; and conſequently thus enjoy a ſort of Virgin Mould, to his great Profit. We commonly ſay in *Hertford-ſhire*, It is a beneficial Opportunity, that a Man enjoys, when he takes a Farm, after a Landlord has occupy'd it, becauſe it is ſuppoſed, that by his Ability of Pocket he had thoroughly dreſſed and manured the Land, and left it in good Heart; which often is the Caſe, and then the ſucceeding Tenant fares the better for it for ſeveral Years after. And I ſay alſo, that it ſometimes happens to the Advantage of an ingenious Farmer that rents a Farm, next after an ignorant one has broke, and gone out of the ſame. Of this I could give Inſtances that at preſent ſubſiſt, within a few Miles of me; where two Farmers now live, who ſucceeded two ignorant ones, that plowed their Ground ſo ſhallow as not to go to the Bottom of the common Weed-roots. Therefore the Weeds oftentimes got the better of their Corn-crops, and help'd to break them, by having wretched poor Crops. Now when another Tenant came after one of theſe, that made Choice of a right ſort of Plough, agreeable to the Nature of the Soil, and plowed the Ground, where it would admit of it, its due Depth, he then came by freſh Mould, that needed no Dreſſing for Years after; or, if he did dreſs it, the leſs would do: And thus he got as good Crops, as the former one did bad ones. The Caſe here ſeems the ſame: For, as this Gentleman obſerves, they plow it ſo ſhallow, that it ſeems a Scratching rather than a Ploughing, and

ſo harrow-in their Barley and Oats. But to ſuch an Undertaking I know there is one of the moſt ſimple Objections made; an Objection that is merely childiſh; and that is,——Who would venture to go and live ſo far from home? Alas! what a ſad Thing it would be to live among Strangers! ſays one to another.——Silly People! There are many of our *Engliſh*, that make as much a Rout about taking a Farm twenty Miles off their laſt Abode, nay, more, than ſome of greater Ability do of going an *Eaſt-India* Voyage. I happened once to be in a Room with a Gentlewoman Relation, who had juſt come home to *England*, after living, I think, ſeven Years at *Leghorn* in *Italy*; when another of her Kindred, being at the ſame time there, ſaid—O Couſin, how could you venture ſo far?——To which ridiculous Queſtion ſhe wiſely anſwered,——O Couſin, I thought it no more than a Journey to *York* by Land.——But the *Dutchman*'s Opinion is ſtill more pertinent to my Purpoſe: His Maxim is, That where he gets moſt Money, that Place is his Home—So that he is the ſame Man in his Mind, Abroad as at Home; in a Spicy Iſland at *Eaſt India*, as in *Holland*. But here is leſs Reaſon, nay, little or none, for an Objection againſt living ſo near *England* as this Farm is; for there is no Sea to croſs to it; it is all Land-traveling; and if there be any Goods to be ſent to, or wanted from *London*, a fair Wind of three Days blows a Ship from one Part to the other. To which I ſhall add the following Encouragement; That, if any Perſon will ſpeedily go and take all or Part of this great Farm of nine hundred Acres of Land, he cannot do it at a better Time, becauſe all Sorts of Grain ſeem now to be at the loweſt Ebb of Price; Cattle the ſame, and every thing elſe relating to the Farming Buſineſs: So that half the Money, and leſs, would ſtock a Farm now, than would at another Time, when Corn,

Corn, Cattle and other Things, ſell much dearer: So that there is no room to doubt, but a ſkilful Man would get Money apace in ſuch good Ground, under ſo eaſy a Rent. And, if he is a ſingle Man, he ſtands a rare Chance of making his Fortune here by Matrimony; for in a Part where none knows ſo well how to manage Huſbandry Affairs, he will be not a little reſpected; and, as he lives in Reputation on his own Stock, he need not fear Proffers enough of rich Help-mates for his Choice of a right one (if he miſtakes not) to be his Partner in Farming. A pretty many Years ago, I am credibly informed, a Servant Man went out of the Pariſh of *Great Gaddeſden* but into *Lincolnſhire*; where when the People perceived he could get great Crops of Turneps by his Art in the open Field, they ſeemed amazed, for they had never ſeen ſuch a Sight before. This and other skilful Practice made the Man be eſteemed to a very high Degree; and, according to the Story, he afterwards became a topping Farmer himſelf, by marrying a Widow, with a ready Stock, well placed in a large Farm: And here, it is ſaid, he lived till he died.

And now, this is to give Notice to any Perſon that has a mind to try his Fortune this way, by employing his Money and Skill, in renting ſuch a convenient, cheap Farm, that lies but a little Way in *Scotland*, where as good Wheat may grow as any in *England*, That if he will apply to me in Perſon, or by Letter (paying Poſtage to my Houſe), he may be further informed of this valuable Opportunity, to become Tenant to a Gentleman that will aſſuredly give him extraordinary Encouragement.

CHAP.

CHAP. XXII.

Of Bees.

THE bad Succeſs that attended Bees in 1743.—— This Summer 1743. though it might be juſtly called a dry one, yet was attended with ſo few Honey-dews, that moſt Bees got not Honey enough to ſubſiſt them all the Winter, which obliged many to feed them with Sugar juſt wetted with Small Beer (for our ignorant Niggards will not be perſuaded Honey is the cheapeſt Food for this Purpoſe), from *Allhallowtide* to the Middle of *April* 1744. and becauſe this Spring Seaſon laſted ſo long cold, that the Bees could not keep abroad to get Honey enough to live on; which Supplies of Food were given them at times when the Weather was open; for then they would deſcend from the upper Part of the Hive, and carry it up; for in froſty Weather they kept cloſe, and would not ſtir to receive any thing that was given them; yet for all ſuch right Feeding, as they falſly call it, I know an old Bee-maſter loſt this Year three Hives out of ſeven; and ſo many others have ſhared the ſame Loſs by Famiſhing, for want of enough Honey-dews laſt Year, *&c.* for on theſe our Country People lay great Streſs, and therefore I ſhould here ſay ſomething particular of them: But as theſe ſeldom fall in Plenty till the next Month, I ſhall poſtpone giving an Account of their Nature till then; and proceed to ſay, that as *May* is the prime Month in the Year for ſwarming of Bees, the greateſt Care ought to be taken to watch their Swarming, that they be not loſt for want of Care: For

A Swarm of Bees in May *is worth a Load of Hay: But a Swarm in* July *is not worth a Fly.*

But

But our Country People inlarge the firſt Line, and ſay,

A Swarm of Bees in May
Is worth a Cow and her Calf, and a Load of Hay.

Which leads me to be more particular on

The Profit of Bees. —— Bees may be bought and removed at ſeveral times of the Year, as I ſhall hereafter obſerve: But the ſafeſt Time of all is reckoned to be the Month of *October*; however, ſome will buy and remove them the firſt, ſecond, or third Night after they are hived, before they are too buſily engaged at work, at a Price accordingly. When they are purchaſed in *October*, the uſual Prices are as follow; as Dr. *Warder*, in his *Monarchy of Bees*, at Page 108. has calculated them; and gives this Account:——Suppoſe, ſays he, you begin to raiſe your Apiary with ten good Stocks, which in ſome Parts of this Kingdom may be bought for ten Half-crowns, in others for Crowns; but in this Country they are ten Shillings a Hive: The firſt Year you will, by doubling your Caſts, be able to have about twenty-five good Stocks, and the next Year about ſixty, and the third Year about a hundred and fifty, barring Caſualties, and if they prove good Years: So that when you have raiſed this Stock, you are rich enough, if you are not covetous: So that in three Years time you may from ten Hives (if good Weather comes) have Bees enough to take the fourth Year an hundred and ſixty, more or leſs, according as the Goodneſs of the Weather is; which, ſet them all at five Shillings a Stock good and bad together, comes to forty Pounds Sterling. And, I preſume, whoever ſhall ariſe to the Half of this Profit, will ſuppoſe themſelves very well rewarded for the Care they have taken about them: But of this more hereafter, when I ſhall make uſe of ſome of the Words and Directions for the

Im-

Improvement of Bees, by the two lateſt Authors that have wrote on this Subject, *viz.* Dr. *Warder*, and the Reverend Mr. *Thornley*; who, having read, and accurately traced, the Works of all former Writers, and made many Years Obſervations of theſe excellent Creatures from their own Experience, have given the World the beſt Accounts of them that ever were publiſhed. The firſt dedicated his Treatiſe to Queen *Caroline*; the laſt printed his in 1744. And although the latter contradicts the former in ſeveral of his Pages, yet I muſt needs ſay, in my humble Opinion, they have both acted their Parts in the moſt pleaſant, the moſt inſtructing, and in the moſt improving way of all others; the informing of Perſons Judgments, chiefly by Facts; a Specimen of which take in the following uſeful Account, as wrote by Mr. *Thornley*:

The Reverend Mr. Thornley's *Account of the Swarming and Hiving of Bees.*——The principal Reaſon why they ſwarm is the want of Room: Therefore in Colonies, where they are not at all ſtreightened, they ſeldom or ever ſwarm; except (ſays Mr. *Ruſden*) through Diſtaſte, Diſturbance, or Miſmanagement.

And in Hives they ſwarm not merely for want of Room, without other concurring Circumſtances, ſuch as a King in Readineſs, Multitude of Subjects, Proſpect of Plenty, together with Weather, which is inviting.

Every Swarm is compoſed of all the three Sorts; *viz.* a Queen, great Numbers of common Bees, both old and young, and Drones, whoſe Number are uncertain; ſome Swarms have more of theſe than others. Dr. *Butler* is of Opinion, that thoſe Swarms which have moſt Drones will moſt ſurely proſper; but I doubt it, till I ſee it proved.

The Multitude of Swarms does not predict or promiſe the Proſperity of an Apiary; witneſs the

laſt Summer 1743. in which I had no leſs than eighty-ſix or eighty-ſeven Swarms; a conſiderable Number of which at *Michaelmas* had not Honey half enough to maintain them till this Spring.

The old Stocks alſo ſending forth ſuch Multitudes (ſwarming moſt of them twice, and many of them three times), they were greatly reduced in Strength, and in Store. Many about the Country are already dead, both old and young; and, no doubt, many more will yet die.

Neither do the earlieſt Swarms always prove the beſt, or proſper moſt, as early as the latter End of *April*, or the Beginning of *May*: The Weather often afterwards is very wet and cold, ſhuts them in, and prevents ſo long their Labours, that I have frequently known even theſe either totally deſtroyed, or exceedingly reduced.

But Swarms at the latter End of *May*, or Beginning of *June*, ſhall proſper, and anſwer the Owners Expectation.

Three Years ago I had a Swarm upon *Midſummer* Day, which laid in a ſufficient Store of Proviſion for their Support till the Spring following; and they ſwarmed that Summer either the laſt Day in *May*, or the firſt of *June*, and every Summer ſince.

And it is more than twenty Years ſince I had a Swarm the Beginning of *July*, which ſtood thro' the enſuing Winter, and proſpered well.

When you obſerve your Hives well repleniſhed with Bees, and begin to lie forth about the Hive's Mouth in the Day-time, and go in at Night, and alſo the Drones appear, you may expect Swarms, eſpecially if the Weather is clear, calm and warm; for in a cloudy, wet, or ſtormy Seaſon, the firſt Swarm ſeldom or ever riſe; though the Caſts, or ſecond Swarms, often riſe in indifferent Weather.

And whenever you ſee them gathering together in little Cluſters upon the Hive, or Stool, you may infer they are preparing, and even ready, for a Dance; and may expect them to riſe preſently.

Get your Hives in Readineſs, and of different Dimenſions, that you may the better ſuit them to the Swarms. To over-hive them, will be a great Diſadvantage; if under-hived, the Prejudice is the leſs, and it is eaſy to give them Inlargement.

An Hive holding three Pecks, or two Pecks and an half, will be a fit Size for an early Swarm of eight or ten thouſand Bees: An Hive of leſs Meaſure will be large enough for thoſe that come later in the Year, and in leſs Numbers.

It may, perhaps, be of ſome Service here to acquaint the Reader with an Experiment I made in *October* laſt; when, putting the Bees of a ſmall and late Swarm into an empty Hive, and afterwards upon a Table, I took a particular Account of their Meaſure, Weight, and Number; in Meaſure a Quart, in Weight one Pound and a Quarter, in Number two thouſand. I firſt impriſoned the Queen; and, having a Perſon at hand to aſſiſt me in the Operation, particularly in counting them over, which took up the greateſt Part of the Time, we had gone thro' the whole Trial, and perfectly finiſhed it, before the leaſt Sign of Life could be ſeen in one ſingle Bee; but in a few Minutes more ſome Signs of Life began to appear firſt in their moving Legs, and then in other Parts; upon which I put them into another Stock, where they are ſtill in Being.

From hence it is eaſy to compute the Number of Bees in a Swarm, of four or five Pounds in Weight, *viz.* eight thouſand or upwards; proportionable to which would be an Hive of ſuch an Extent.

Your

Your Hives thus at Hand, you may dreſs them agreeably to your own Fancy. I rub mine only with a ſmall Handful of Fennel, dipped in a little Ale ſweetened with Sugar; ſometimes with nothing at all, except it be a new Hive.

It is a common Practice with moſt to place Sticks in the Hives, the better, as they ſuppoſe, to faſten the Combs: But if your Hives are of a right Form, and narrower at the Mouth than the Middle, I ſee not any the leaſt Occaſion for ſuch a Precaution; the Bees will themſelves effectually ſecure the Combs from falling.

Beſides, you will gain this Advantage by this means, that is, taking out the Combs full of Honey, in a manner, intire, and not broke in Pieces.

The two principal ſwarming Months are very well known to be *May* and *June:* As to the Hour of the Day, it is not certain; I have known them to riſe near Eight in the Morning, and after Four in the Afternoon; but moſt generally between Eleven, and One and Two. It might not be amiſs to have a watchful Eye upon them a good Part of the Day; and now be ſure to give them Door-room enough, opening the whole Paſſage for them, though it be a Week or ten Days before the Swarm comes.

As ſoon as your Swarm is ſettled, hive them, to prevent any other joining with them: The Method of hiving them you will learn from their Place and Manner of Settlement. A Twig, or ſmall Branch, you may gently cut off with a ſharp Knife or Saw, or ſhake them into the Hive, ſetting it down upon a Cloth, ready ſpread upon the Ground, with a little Stick placed acroſs to bear up one Side, to give them the Liverty of paſſing in and out.

If you ſhake them into an empty Hive, and many (as uſual) return to the Place, repeat the Action as often as there is Occaſion, knocking them out of the empty Hive upon the Cloth; you will with Pleaſure ſee them croud to their Companions in the other Hive, like Sheep into a Fold.

But if they ſettle, as ſometimes, upon the Body or large Arm of a Tree, *&c.* the beſt way is with a Bruſh, or a little Handful of ſmall Branches, to ſweep them into the Hive.

Being thus fixed in a new Habitation, in the Evening, when they are all within and quiet, carry them to the Place you have appointed for them, leaving them no Paſſage into or out of the Hive, but only at the Door, which may gradually be reduced to a narrower Compaſs.

When they are ſwarming and dancing a *Levalto* in the neighbouring Cloud, I never entertain them with any ſort of Muſic, as do the Country-people, which drowns the delightful and more melodious Sound of the Bees: Nor is it of any Service, ſave to prevent Diſputes, and to preſerve Peace among Neighbours.

I have often known the Queen to fall upon the Ground, not being able to fly, through ſome Defect in her Wings; then the Swarm returns home again, and the next time they riſe, they have another Sovereign. I have known the Swarm ſtay in the Hive near a Fortnight before they roſe again; and, perhaps, waited for a Leader: Sometimes they roſe no more.

The poor diſabled, unhappy Princeſs, I have picked up in the Graſs, but never without ſome Attendants, whom nothing but Violence could ſeparate from her.

To conclude: If Ants are commended for their prudent Pains, providing their Meat in Summer, and gathering their Food in Harveſt, though unſerviceable

ſerviceable to Men; how much more worthy of Praiſe are theſe inſtructive, exemplary Inſects, who herein ſet us (both as Men and Chriſtians) a Pattern fit for our Imitation! Go then to the Ant (or rather to the Bee), thou Sluggard, and learn Wiſdom.

I.

MY drowſy Pow'rs, why ſleep you ſo?
Awake, my ſluggiſh Soul!
Nothing has half thy Work to do;
Yet nothing's half ſo dull.

II.

The little Ants for one poor Grain
Labour, and tug, and ſtrive:
Yet we, who have an Heav'n t'obtain,
How negligent we live!

III.

Good God! on what a ſlender Thread
Hang everlaſting Things!
Th' eternal States of all the Dead,
Upon Life's feeble Strings!

IV.

Infinite Joy, or endleſs Woe,
Attends on ev'ry Breath;
And yet how unconcern'd we go,
Upon the Brink of Death!

In Praiſe of BEES, *being Part of that excellent Poem wrote by* JOSHUA DINSDALE, *A. M.*

AFTER their Origin, th' induſtrious Bees
Dwelt in the cleſted Rocks, or hollow Trees;
And in the Grot's Receſs, or leafy Shade,
The Wonders of their fragrant Art diſplay'd.
With the ſweet Odours of fair blooming Flow'rs,
We call'd them from the Woods to ready Bow'rs,
And made them love the Hive: For offer'd Gain
Will cheat the careful Bee, and ſimple Swain.

Thus Hives were firſt with golden Honey fraught,
And their Republics ſharpen'd human Thought;
Inſpir'd, with Love of public Good, Mankind,
Till Fraud and Luxury debauch'd the Mind.
But difficult's the Taſk, with curious Eye
Into the Myſt'ries of their State to pry;
For, cautious, they avoid an open Light,
And hide their Labours from the Robber's Sight.
Should any Spy diſturb their balmy Seat,
They ſtrive with Stings his Treach'ry to defeat;
And boldly fly in the Invader's Face,
To make him, inobſervant, ſhun the Place.
Yet ſtill the ſweet induſtrious Kind invite
The raptur'd Muſe to bring their Praiſe to Light
(Tho' Honey all their wiſe Ambition raiſe),
And conſecrate them in her grateful Lays.
The Sage, with Art, and ſearching Thought endu'd,
Who ſubtle Nature's inmoſt Secrets view'd,
By quick Invention a nice Hive compos'd,
And in tranſparent Glaſs the Bee inclos'd;
Which all the Wonders of the State diſplay'd,
And open both their Art and Manners laid.
When Ev'ning paints the Heav'ns with roſy Stains,
And Flow'rs ſmell ſweet upon the dewy Plains,
The Bee, returning, prudent wings its Way,
Nor ſleeps fortuitous, like Birds, a Prey;
But in its Cell is loſt in Sleep profound,
Tho' the Rain beat, and the Storm murmur round.
Not Man, with all his boaſted Art and Care,
Lives ſafer from th' Inclemency of Air,
Tho' he a *Louvre* with vaſt Coſt provide,
A Monument of vain unbounded Pride.
Ev'n, what too often waſtes our wretched Race,
They never feel pale Poverty's Diſgrace;
But in the blooming Seaſons hoard their Store,
In common live, nor proudly wiſh for more.
Equality and Concord warm each Breaſt,
By Love of public Good ſupremely bleſt.

CHAP.

CHAP. XXIII.

A further Account of Weeds.

HOW the pernicious Dunny Weed, or Colts-foot, &c. is kept down from damaging a Barley-crop. ——It is true, that forward ſowing of Barley is the ſafeſt and ſureſt Way to obtain a full Crop of it, provided the Ground it is ſown on is pretty clear of Weeds: But where a Field is over-run with this horrid Weed, that defies the Ploughman's Art to extirpate, Barley ought not to be ſown for the following Reaſons: Firſt, The Dunny Weed generally ſhews its yellow Flower-head in *March*, which is the Month that moſt Farmers, both in *Vales* and *Chelturne* Countries, ſow their Barley-ſeed in. Now where a Field is taken with this Weed, and the Barley is ſown early in it, it will quickly overtake the Barley; and thus getting the Maſtery of it, will either kill the Grain, or cripple its Growth to that Degree, as to render it perhaps hardly half a Crop at Harveſt. I knew a gravelly Field of three Acres of Barley almoſt ſpoiled by this very Weed; for its Stalks, and broad Leaves, have ſuch numerous deep ſtringy Roots, that they potently draw to them the Goodneſs of the Ground for their Nouriſhment, and ſo get the better of the more weak-rooted Barley. Secondly, To prevent this Loſs in a great Degree, let a Farmer plow his Ground well with a Fin, or Iron Wing, fixed on the Side of the Share, the laſt time but one before the Barley-ſeed is ſown; for, by this means, the Fin will cut in two moſt of the Stalks or Strings of the Dunny Weed, which will be prevented growing and increaſing into more of theſe Weeds, by their time of lying, and afterwards being diſturb'd again at the laſt plowing

ing and harrowing-in of the Barley, which on this Account ſhould be in *April*. Thirdly, As this Weed is in its full Sap in *April*, and Beginning of *May*, the Plough and Harrows, by this their late Operation, will ſo cut and bruiſe the Stalks of the Dunny Weeds, as to make them (what we call) bleed, or loſe their Sap; and thus they become much weakened, and their Growth checked in favour of the Barley-crop. With this Management, and with ſteeping the Barley-ſeed, the Weed may be kept under, which otherwiſe might keep under the Barley: Then if the Barley-ſeed was of a right Sort, and ſown in a well-prepared Soil, there will conſequently be a great Crop at Harveſt: But when I ſay, a right Sort, I mean, that when Barley is to be thus ſown late, in order to check the Growth of the Dunny Weed, it is abſolutely neceſſary, that ſuch Seed came laſt off a Sand, or ſandy loamy Soil; for this Sort is what we call the Rathe-ripe, or Forward Sort; and by ſuch its Quality, it will be forwarder ripe than the common Sort of Barley, that was ſown earlier.—— This fine profitable Barley-ſeed I furniſh to Gentlemen in any Quantity to any Part of the King's Dominions.

How the whiteſt Barley may be got.——This rathe-ripe Barley ſown late in *April*, or at the Beginning of *May*, requires the leaſt Time to ſtand in the Field; and for this very Reaſon will prove the whiteſt of Barley, if the Seed was ſown in a chalky, gravelly, or dry, loamy Soil; becauſe Rains will have the leſs Time to fall on, and baſh the Ears of Barley; for the more Rains that fall after the Corn is near ripe, the higher Colour the Barley will have: And though the Seed is ſown latiſh, it will be ripe betimes; becauſe, if the Seed is ſteeped, and the Weather is favourable, the Barley-corns will ſtrike Root preſently, as having at this time

of

of the Year little or no Froſts to impede their Growth, nor long Nights to retard it; whereby ſuch Barley will certainly acquire a whiter Colour, and a mellower Body, than that ſown in *February*, or early in *March*; and, on this Account, will aſſuredly fetch the greater Price at Market; for this Quality in Barley is now much in Eſteem for making the paleſt Malt; which all Farmers can't enjoy; only thoſe that have a proper Soil, and give the Seed ſuch a proper Management, have Reaſon to expect the Enjoyment of ſuch a Benefit. The Year 1744. proved the Truth of this, in a high Degree; for, by the long Drought that preſently ſucceeded the Sowing of dry common Barley-ſeed, the Crops, at Harveſt, were under three ſeveral Ripeneſſes, when mowed; *viz.* green, half-green, and ripe: A Condition repugnant to the making of true Malt; for it is impoſſible, that Malt made with ſuch Barley ſhould be otherwiſe than in different Degrees of Goodneſs, for Reaſons I intend hereafter to give, when I write of Malt, *&c.*

How a Farmer ſuffered a conſiderable Damage in his green Corn-crops, by a certain Weed, called, in Hertfordſhire, *Arpent.*——This is a moſt deſtructive Weed, eſpecially to Corn-crops, becauſe of its quick and great Increaſe; for this is one of that Sort that will grow by either Root or Branch; and is ſo prone to grow, and maintain its Growth, that, if it lies out of the Ground a Month together, in ſome Weather, it will, like the pernicious long-lived Dock, not die. And it is, on this account, that Houſewives love to ſee it in their Houſes, for the ſake of its long continuing green, either in Water, or out of Water; being of a moſt ſucculent Nature, ſomewhat like Houſeleek: Nor is this its tenacious, retentive, ſappy Quality, to

be wondered at, ſince a ſmall Stalk, or Branch, not above ſix Inches in Length, nor bigger than a Wheat-ſtraw, has ſometimes been ſeen with ſix or more bulbous Roots to nouriſh it; ſome of which are in the Shape of a ſmall Shallot, others Radiſh-like, long, and much bearded at their Ends; and theſe all in one Bunch of Roots, whereby it acquires a very potent Power to penetrate the Earth, and draw ſo much of its Quinteſſence to its Aſſiſtance, as qualifies it to rob a great deal of the Corn that grows near it, of that vegetative Property neceſſary to forward its thriving into a full Ear of large Kernels. This horrid Weed grows, for the moſt Part, in loamy Soils, both in the ſtiffer and ſhorter Sorts; and gets ſuch Poſſeſſion of ſome incloſed *Chelturne* Grounds, where a careleſs Huſbandman is the Occupier, that it is almoſt above his Match to deſtroy it; as I ſhall make appear by the following Caſe: A very wealthy Farmer, and one who lives not a great Way from me, under the Reputation of a very acute Manager of his Farm, becauſe he generally plows and dreſſes his Land more than many of his Neighbours; and gets fine Crops of Grain accordingly; yet this very Farmer, notwithſtanding all his Charge, Vigilance, and Care, had an incloſed, loamy Field, containing two Acres and a half of plowed Ground, overrun with this Arpent-weed, that cauſed his Wheat, Barley, Peas and Bean-crops, ſown in the Random-way, to grow thin, though he ſowed the Seed thick; and, conſequently, had a poor Crop at Harveſt: Which provoked him, for ſeveral Years paſt, immediately after the Ploughing and Harrowing of this Field, to gather up the Arpent-roots, and their Stalks, that the Plough and Harrow broke in pieces, and left on the Surface of the Ground. In *Auguſt* 1743. this ſame Field had

a Crop of Wheat reaped off it; and, as this Farmer keeps his Land always rich in Dung, he reſolved to ſow the ſame with Barley in the following Spring-ſeaſon. To this Purpoſe, he gave it ſeveral Ploughings and Harrowings, preparatory to bring the ſame Land into a fine, looſe, porous Condition, for the better Reception and Covering of the Seed; and, after ſuch Ploughings and Harrowings, employed ſeveral Hands to gather up the broken Roots and Pieces of this Arpent-weed in Baskets: And this he did (as one of the Men told me, that was one of his Gatherers) to the Quantity of a Dung-cart full, between laſt Harveſt and this Spring-ſeaſon 1744. And this Work he continu'd, even ſome Time after the Barley had appear'd green; for where-ever they ſee a Piece of Arpent appear green or ſprouting, they pull'd it up.

Another Caſe of the ſame Farmer, ſhewing how the Arpent-weed damaged a Crop of Horſe beans, while they lay ſtored in a Barn.——The Miſchief of this Weed does not always end with the getting-in of the Crop of Grain it grew amongſt; for, as its Remains generally grow again, after Weeding-time, into high Stalks and Leaves, it unavoidably muſt be mowed with the Barley or Oats, or Peas or Beans: And this happened to be the Caſe of the before-mentioned Farmer, who having a great Crop of Horſe-beans that he mowed, there was ſo much of this Arpent-weed amongſt them, that grew in this ſame incloſed Two-Acres-and-an-half Field, about three Years ago, as obliged him to houſe it with the Beans; for it was almoſt endleſs Work to pick it out from amongſt them in the Field. Now it happened, that the Beans and their Stalks were got dry enough to carry into the Barn, before the Arpent was thoroughly wilked and dried; and, in this Condition, for fear of rainy

Weather, he carried both Corn and Weeds in together: But ſo it was, that the ſucculent Leaves and Stalks of the Arpent kept alive, and reaſſumed a ſort of Growth; at leaſt, they preſerved themſelves in a ſappy Condition: And this increaſed the more by the Sweat of the Beans, that added a Moiſture to their Moiſture; which the long-liv'd Arpent readily embraced, and retained ſo long, as to cauſe great Quantities of the Beans to mould and rot, as they lay in the Barn; inſomuch that, when the Corn came out to be threſhed, a Sack of it was not worth ſo much, by three or four Shillings, as they would have otherwiſe been, had the Horſe-beans been houſed ſound and free of this deſtructive Weed. If then an able and diligent Farmer as this is, ſuffers ſo much by a ſingle Weed; What muſt be the Caſe of a poor indolent one? Why, as the maſterly Growth of Weeds has occaſioned many a Farmer to break, and come to Ruin, it, in courſe, muſt be ſuch a one's Caſe: And this, becauſe when the Weeds get Maſtery of a Crop, they not only ſpoil the Ground for that Year, but it afterwards becomes impoveriſhed by their repeated great Suction, and unable to ſupport ſucceeding Crops of Grain. Beſides which, they cauſe the Ploughing, Dreſſing, Seed, Rent, and Labour to be moſtly loſt: And thus are produced thoſe fatal Conſequences, that not only affect the preſent Tenant, but thoſe that come after him for many Years; and chiefly for this Reaſon, that the Seed of the Arpent, and other Weeds, are bred to an infinite Increaſe, and ſcattered over the Land: So that there is hardly any ſuch thing as totally deſtroying them, and their Progeny, while Seed is ſown, and Crops of Grain ſuffered to grow in the Broad-land Manner: Which Caſes oblige me to reſound the Praiſe of the Three-

wheel

wheel Drill-plough and Horſe-break; becauſe theſe Inſtruments may be made to clear Land of this peſtiferous Arpent-weed, and all others, at the ſame time they are fining the Earth, and nouriſhing the Crop of Grain, in a far cheaper manner than any other Way poſſibly can.

CHAP. XXIV.

Of a Pointing-dog, &c.

THE Copy of a Letter from a Gentleman to this Author, for buying him a Setting and Pointing Dog, *&c.*

SIR, *July* 10th, 1744. *Devon.*

I WAS favoured with yours laſt Week: In Anſwer to the ſame, I do aſſure you, I think myſelf obliged to you for remembring me; and, I hope, this Year, as Cyder will be plenty, to ſend you a Cask. As for what you mention about the Secret for deſtroying the Fly on young Turneps, *&c.* that is too late to try now. Theſe Vermin generally infeſt young Plants in the Spring: But another Seaſon I will (God willing) try the ſame, and comply, as you deſired, with the Money, and every thing elſe.

As for the Peat-earth Aſhes, we have great Plenty of them, and are our common Fuel near the Commons; a large Propriety of which belongs to me; ſo can get many Thouſands of Loads when I pleaſe: We look upon thoſe Aſhes here, when burnt in our common Chimneys, to be good for little, as they retain but few Salts. Our common

Manure

Manure here, is Sea-ſand and Lime, mixed with Earth and Dung: Some burn the Turf off the Grounds; ſome do not: The latter I take to be beſt; as, to be ſure, the Strength of the Ground is in the Superficies; and when that is deſtroyed, as it muſt by burning, the Remainder is but poor: However, People have great Crops this Way; which I attribute to their liberal dreſſing the Grounds. I ſhould be glad to try the Peat-aſhes, if you would direct me how to burn them: Our Blackſmiths here burn them to a Coal, to work in their Forges. The Method they take, is, to burn them in Heaps, as you do Charcoal, and covered over. I have got ſome *Chineſe* Pigs from a Gentleman near me, who brought them from Abroad: We run into that Breed much. I ſhould be glad of a good Ploughman much; and one that can ſhoot, or knows how to kill Game; for I have large Royalties of my own; and I have now left off Hunting. Twelve Pounds a Year, with Waſhing and Lodging, are great Wages. I ſuppoſe moſt of your People can drive a Chaiſe, or Chariot, if it ſhould be required.

If you could get me a Woman that underſtands Breeding of all Kinds of Fowls, as Pheaſants, *&c.* As for our Dairies, we ſcald our Milk; which your People know nothing of; and make but little Cheeſe; for the Skim-milk turns to better Account, to feed Pigs, or to bring up Calves in the Houſe with, when they come to be two Months old; we mix with ſome Water-gruel; Hay they have in little Racks, and ſome Oats: In the Spring we turn them out: Few People have larger Cattle: Some we turn away with their Dams. I ſuppoſe your People all know how to ſuckle Lambs, and every Branch of a Farm. Sobriety and Honeſty are two of the chief Ingredients to complete a good Servant;

Servant; without which, I would by no means take any one: The more diligent, the better I can make his Place; which happens in my way, more than in your Country, as Perquiſites will ariſe: A good-humour'd Man I love much, eſpecially ſuch can't avoid loving his Cattle. We plow here with Oxen chiefly, as it is cheapeſt; and afterwards ſell them, as Young-ones come on, to the Graſiers, or feed them off ourſelves. Our Soil is a light Hazel-earth, and produces good Corn and Paſture, but is a little rocky; ſo doubt whether your Drill-plough would do here; as ſome Rocks you ſee, and ſome you can't, being covered ſix Inches, or more. We have now extreme bad Weather for the late Hay; it has rained for above three Weeks time, and is now ſtill falling. Whatever this Country affords, is at your Service; as is, SIR,

Yours to command.

Let me hear from you often, I beg.

P. S. Pray let me know how Eſtates lett in your Country; ours decreaſe in Value daily, though Wool yields a conſiderable Price; *viz.* Six-pence *per* Pound: Wheat is eight-and-twenty Shillings *per* Quarter, Barley twelve Shillings, Oats the ſame; Butter Four-pence Halfpeny *per* Pound, and eighteen Ounces to the Pound; which is cheap. Our Countrymen bring in Privateers daily; ſo what that may do, when a Peace comes, I don't know. A vaſt deal of Money is brought into this Country by our Sailors; which, we hope, will raiſe the Eſtates, when the Money comes to be applied, as theſe Folks are moſtly Husbandmen. I wiſh you could get me a good Pointer; I will give a good Hogſhead of Cyder, and a Piece of Gold: So pray try your Friends: Mine is dead lately. I have a vaſt Quantity of Birds.

The

The Copy of a ſecond Letter, for this Author to buy a Gentleman a Pointing-dog.

SIR,

I AM obliged to you for the Favours you have beſtowed upon me, in giving yourſelf ſo much Trouble about the Dog-pointer: I would have him to do his Duty well, in all reſpects; and to ſuffer a Net, upon Occaſion. The chief Uſe to me, is for the Heath-game or Grous, of which I have on my Moors a pretty many; and now is the Seaſon: It is a noble Quarry; and the Cock is the moſt beautiful Bird we have in *England.* I ſhall leave it intirely to you, to ſee the Dog perform his Duty, in both Pointing and Setting; and the firſt in Company with other Dogs; and how he hunts his Grounds, faſt or ſlow: The Age is well enough; for, you ſay, this is the ſecond Seaſon: You don't mention whether Dog or Bitch; but the latter I ſhould chuſe; but, if I can't be ſo lucky now, muſt wait another Year. If the Man uſes me well now in this Dog, I may be a Chap, for ſeveral Years, to him, in ſupplying my Friends: And I promiſe, upon my Word and Honour, to give him ſomething more than the Price, if he proves according to my Expectation. The Dog you ſpeak of is that of two Years Hunting in Company; not the ſmall one of five Guineas, which, you ſaid, was a Gun-dog and Setter: This, you ſaid, the Man asked ſeven Guineas for, and a Hogſhead of Cyder; but believe, he might abate a Guinea: You ſaid, he was broke by a Gentleman's Game-keeper in your Neighbourhood. Now, I think, you had beſt have the Liquor yourſelf, and agree with the Fellow for a certain Sum, to be delivered in *London* to the ——— Waggoner, and

and take his Receipt, or Bond, for the ſame; I ſhould rather have the latter, as the Penalty is double the Value. I will willingly give him ſix Guineas, and a Guinea more, if he proves as before-mentioned. If he, or any other, like the Propoſals, I will immediately order the Money to be paid in Town, upon the Delivery of the Dog. I hope he is a handſome one; as our People here expect ſomething curious from your Parts of the World. Your Cyder ſhall be ſurely ſent to your Order in *London*, as ſoon as it is fit, free of all Charges, as a ſmall Acknowlegement of your great Favours. Pray, how far may you be from *Baſing-ſtoke?* I would ſend there, on Purpoſe for the Dog, if that could be done; which is about four Days Journey from hence. I am, SIR,

Auguſt 25th, 1744. *Yours*, &c.

Which Letter I anſwered; and ſince have received the Copy of the following one; *viz.*

A third Letter, concerning this Author's buying a Pointing-dog for a Gentleman.

SIR,

I AM favoured with Yours, dated the 12th of this Inſtant; and think myſelf under great Obligations to you, for the Trouble you have taken about the Dog; which I thought, by your former Letter, would ſuffer a Net; which is of ſingular Uſe, upon ſome Occaſions, in order to preſerve ſome Birds alive. I think you have offered a full Value in the ſix Guineas; more I am not willing to give, eſpecially as the Caſe ſtands; the other Guinea I would not grudge, would he ſtand the

Net. I forgot to mention how he is inclined to Mutton; for that is a very material Article: I wiſh the Man a better Chap, if he refuſes this Offer. My Siſter is ſoon to be in *London*; and you may find her at Mr. ——— a ——— in ——— *ſtreet* in the *Strand*, where ſhe lodges: She will give you a good Glaſs of Cyder, and make my Acknowlegement to you, for the Civility you have ſhewn me. Your Hogſhead of Cyder will come with a Dealer's in Liquor of that ſort; and if you can help him off with ſome, ſhall be obliged to you. I beg you would ſave me ſome Beech-maſt; and ſhall be obliged to you for a Turkey-Poult or two: I expect ſome from abroad myſelf; and, if I ſucceed, can ſet you up again. I will take no Servant-man, till you can ſupply me with a real good one; his Place will be upwards of twenty Pounds a Year, with his Perquiſites: As for a Woman Dairy-maid, and to look after Turkeys and Pheaſants, I will wait till the Spring, and then expect one: The more of a Sportſman the Man is, the better; he will have no one to controul him but myſelf; and the more obliging and induſtrious he is, the more Advantages he will reap: But your Caution is ſufficient. I think the Method your Gentlemen take, in having a Game-keeper, is illegal; as not being a menial Servant, or qualified according to Law, as the Statute directs; and, conſequently, is liable to the Penalty the Law inflicts in ſuch Caſes: This, here, would be taken notice of; but a Blot is no Blot till it hits. I will give you a particular Account about the Cyder, when you have taſted mine at my Siſter's: And, whatever Grafts you want of our Fruits, will ſend you a whole Bundle. If the Fellow will take the ſix Guineas, or engage about the bearing the Net, at his Price; *viz.* ſeven down; then

then the Thing is all over; and I will order your Charges to be paid, as above hinted. Your Anſwer, as ſoon as poſſible, will oblige, SIR,

Aug. 17th, 1744. *Your moſt humble Servant.*

An Account of the excellent Nature of Sprat-barley, &c. *from* Derbyſhire *and* Nottinghamſhire: *In a Letter to this Author from a young Ploughman-ſervant, that he ſent to a Gentleman in* Cheſhire.——

SIR,

I Received your Letter with great Satisfaction; and am pleaſed to hear, you have ſown the Sprat-barley, for the firſt Time, in your Farm: I do aſſure you, it is a moſt valuable Sort; and ſo much in Eſteem about *Derby*, and *Mansfield* in *Nottinghamſhire*, that it is preferred to all others for making a Malt, that produces a charming Ale, if the Malt is made by a ſkilful Workman, and dried with Coak, becauſe of its fine pleaſant Taſte and Goodneſs; and is here ſold for twenty Shillings a Load, which is ſix Buſhels; and is very likely to be much deſired; for, I hear, they have a great deal of Barley mowed, and have ſuffered much Damage by the late great Rains, which continued near a Fortnight together; and the ſame here: But, as our Harveſt is much later, we have ſuffered but little yet. Our Land is of a wet, ſpringy, and loamy Nature; and the oftener it is plowed, the more Weeds come up, even as much Weeds as Corn; and, when theſe get a great Head on the Ground, as they will ſoon do, they cannot eaſily be deſtroyed; for I never was ſo hard ſet to keep them under, and the Twitch-graſs, which it is very ſubject to; and doubt, notwithſtanding all my greateſt Endeavours, that I ſhall not be able

to deſtroy them in any reaſonable time; becauſe, the more I plow, the more they multiply; therefore it is very different from the *Hertfordſhire* Land: And, as it proves to be more profitable for Paſture than Corn, great Quantities of it are laid down for Graſs-land throughout *Cheſhire*. I am now preparing the Ground in the beſt manner I can poſſible, for a Trial of the Three-wheel Drill-plough you have ſent us; but, by reaſon of the Continuance of the wet Seaſon, I cannot yet complete it for that Purpoſe: However, in a Fortnight's time, I intend to begin ſowing: therefore, againſt which, I deſire that you will ſend me the exact Form of the two little Irons you mention, how they muſt be fixed, in order to complete the Drills; for I cannot do it well by the Harrows: For, by this, you will do me and my Maſter a great Service: And, with it, I deſire alſo that you will be ſo kind as to ſend me as exact a Form as you can of the Inſtrument you uſe for cutting of Chaff, ſo that I may get one made by it; for my Maſter has a great Deſire to have one of them here. We have little Convenience for ſowing Peas and Beans, very few of which are ſown here; for the greateſt Part of this Eſtate is kept for a continued Paſture, for maintaining ten Milch-cows all the Year; and this is what we chiefly truſt to, as moſt Farmers do, for paying their Rents, becauſe they find moſt Profit by it, as this Ground exceeds moſt others for this Purpoſe, in making excellent Cheeſe and Butter. I have not an Opportunity, at preſent, of ſending you a full Account of Potatoes, according to my Promiſe; but intend to do it in my next, which, I hope, will be before the Seaſon. Apples are ſo plentiful here, that they are ſold for Four-pence a Buſhel: My Maſter having a great Quantity of them, he intends

tends to uſe great Part of them for Cyder; and has a great Deſire to try the Method you recommend, beyond moſt, or all others: Therefore I deſire you will ſend me the beſt Receipt you have, not only for making, but alſo for preſerving that excellent Liquor; for they cannot make a good Sort in this Country. The Parſnep Apple-tree, which I informed you was dead, is yet alive, and appears to be vigorous; to the Surprize of me and my Maſter.

September 1ſt, 1744.

The Copy of a Letter relating to that excellent natural Graſs-ſeed, ſaved from the Pods of the *Lady-finger-graſs*.

SIR,

HErewith I have ſent you —— Ounces of *Lady Finger-graſs* Seed, as you deſired: It is a Seed ſo ſcarce to be got, that it is difficult to gather two Quarts of it among five Acres of Meadow-graſs. I left ſeveral Parcels of Graſs ſtanding at Mowing-time, for obtaining this Sort of Seed in right Order, by letting it ſtand to ripen. If there be proper Care taken of its ſowing and preſerving, you may increaſe it to what Quantity you pleaſe; for it is a very hardy Graſs, and will grow almoſt upon any Soil; by which you will become Maſter of, perhaps, the fineſt natural Graſs in the whole World: And, for keeping it in a flouriſhing State, if you will order your Servant to ſtrew ſome Coal-aſhes over it, to the Quantity of ſixty Buſhels, every three Years, on every Acre, this Graſs will be prodigiouſly increaſed, and made to grow, in

a wet Summer, Knee-high; for which the Month of *December* is the beſt Time. I hope to furniſh you with a good Quantity of wild Thetch Graſs-ſeed, next Year; and am, SIR,

Yours, &c.

Little Gaddeſden, 20 *Sept.* 1744.

INDEX

For the Month of *MAY*.

A

ADDER, *an Eſſay on this and other Serpents* Page 109

B

Barley, *how to ſow it with Succeſs in this Month* 17
——— *a new and very cheap Receipt how to ſteep it in Coperas* 18
——— *a further Account of the Benefits attending ſteeped Barley* 21
——— *the good Effects of ſowing it ſteeped in Drills* 23
Beans, Peas, Carrots, how ſome Farmers have a better Opportunity to improve them than moſt Gardeners 26
Broad Beans, and the Hot-ſpur Sort, the Method and Benefit of ſowing them in this Month 28
——— *Beans, how to ſteep them to forward their Growth with Expedition* 29
——— *Beans, how a Rood of Ground was improved by them* 36
Buſtard Wildfowl, a Copy of a Letter from a Perſon concerning the catching and improving their Breed in the tame Way, being a different Account from thoſe of the Buſtard publiſhed in January *and* February *in* The Modern Huſbandman 96
Remarks on this Letter 97

INDEX.

Beans damaged by Mice Page 36
Broad Beans, how the Leighton *Gardeners prepare them for a forward Growth* 37
Barbel, the poiſonous Nature of its Roe 80
Bees, their Swarming, Hiving, and Profit 166, 167, 168
Barley, how to get the whiteſt Sort 176
Barley, Sprat-ſort, its excellent Nature 187

C

Colt, *an Account of the Death of one ſuppoſed to be occaſioned by his drinking fowl Pond-water full of Inſects* 68
Some Account of ſtagnating Pond and Ditch-waters, and the Inſects they abound with 71
Cows, how they were hoved in Clover, and how they were recovered 38

E

Eff *Land, its poiſonous Nature; the ſame of the Roe of a Barbel, &c.* 80
Eels and other Fiſh to take in the Night-time 85
Second and third Way 86
Fourth Way ibid.
Experiment made on the Slug, or naked Snail, by a Ploughman 115
Eſtates, their Improvement 141
Eff-water, how it poiſoned a Cat 78
Ewes, how to feed them for fattening their Lambs 39
—— *of feeding them on green Oats* ibid.
—— *the Diſadvantage of feeding them, and their Lambs, on a thin Crop of green Oats* 42
—— *and Lambs, to feed and fat them among Beans* 46
Eel, how it poiſoned a Dog 77

INDEX.

Observations on the Death of the Eel and Eff Page 79

F

Farmers, *how necessary it is for them to observe the right Time of plowing, sowing, mowing, feeding Cattle*, &c. 3
Fish to take by Angling 83
——*Second Way* ibid.
——*Third Way* ibid.
Fly Caddis, its Breed and Nature 84

G

Lady Finger Grass-seed 156, 189

H

Hoeing *Beans by Hand* 35

I

Insects, *Water, the great Importance of knowing their Natures* 57

L

Lambs, *of fatting them in fallow Fields* 44
——— *weaning them on green Oats* 45
——— *weaning them in Pea-fields* ibid.
——— *Grass, their Gelding* 49
Letters, three, their Copies from an ingenious Gentleman concerning Improvements in Husbandry 103
——— *this Author's Answer to the same* 106
Land Eff, its poisonous Nature 80
Letter from a Lady about improving her Estate, and this Author's Answer 141

Copy of a Letter from an unknown Hand Page 89
Letters, the Copy of three, about a Pointing Dog 181, 184, 185

O

Oysters *of a Copperas Taste, their poisonous Nature* 81

P

Ploughman, *how necessary it is for him to understand his Business* 31
Polype Water-animal, and other Insects, their wonderful Properties 56
—— *a particular Account of its Nature* 58
—— *its poisonous Nature, and that of other Water-insects, and of their Waters* 63
Pond, of a Farmer's, the ill Consequences of its bad Situation 74
—— *Another Account of the same* 75
Peas, sowing and hoeing them 33
—— *large and white, sown to a considerable Profit in* May ibid.
—— *called the* Nimble Pea ibid.
—— Carolina 34
—— *a large Field of them eaten by Slugs* 117
Crops of Hog-peas lost by Slugs 118
——*How these Misfortunes may be prevented* 119
Pigeons, how they eat a Field of Peas 131
—— *how they eat Wheat-seed* 136
Pointing-dog, three Letters from a Gentleman, about this, and other Affairs 181, 184, 185

S

Sparrows, *their Breed in* May 120
—— *their Damage to Farmers* 121

Sparrows, to keep them from hurting Standing-crops of Corn, and Fruits of Trees Page 124
Remarks on Mr. Bradley's *Letter on ſmall Birds* ibid.
Sparrows, old and young, how to deſtroy 128
——— *how a Boy robbed Houſes by means of a Sparrow* 130
Sheep, a new Attempt to feed them among Pea-crops 93
Seed St. Timothy, *that produces an artificial excellent Graſs, ſix Feet long, and may be mown four or five times a Year* 156
Sheep, how a Farmer had eleven hoved in Clover 37

T

Trefoil-*ſeed, why beſt ſent to diſtant Parts in its Hull* 48
——— *how many Ewes and Lambs an Acre of it will keep fat* ibid.
Trout-fiſhing 81
Trouts catched in Hydes 84
Tench-broth, how it reſtored a Gentleman, very much reduced by Sickneſs 88
——— *Receipt to make Tench-broth* 89
Trees and Hedges, the great Importance of preſerving them from Cattle 90

V

Viper *and Adder, their Nature and Reſidence* 111

W

Worlidge, *his Notes on Husbandry* 1
Wheat, and its Incidents, in this Month 8
Wheat-crop, how one was improved by a Company of Soldiers 11

INDEX.

Wheat, French, *why some think it better sown Broad-cast, than in Drills* Page 12
——————— *a new Method of sowing it* 13
——————— *how it may be improved by the Drill-husbandry* 14
Weeding in May 52
Wheat Crop, how one was weeded ibid.
Wheat and Barley, how spoiled by Weeds 53
Weed, Dunny, how prevented damaging Barley-crops 175
The Case of a Farmer, who suffered much by the Arpent-weed in the Field 177
How the same Farmer suffered by the same Weed, as it lay in his Barn among his Corn 179
How the Three-wheel Drill-plough destroys the Hair, and other Weeds 154

FINIS.

AGRICULTURE Improved.

For the Month of June.

CHAP. I.

MR. Worlidge *his Directions to the Husbandman for the Month of* June.—" A Shower at this Time of the Year is generally welcome: Now *Phœbus* aſcends the utmoſt Limits of the Zodiac towards the Pole Arctic, and illuminates our moſt Northern Climes; and makes thoſe Countries that within a few Months ſeemed wholly bereft of Pleaſure, now to reſemble a terreſtrial Paradiſe; and gives unto them the full Proportion of his Preſence, which in the Winter paſt was withdrawn, that they partake equally of his Light with the more Southern Countries. The glorious Sun glads the Spirit of Nature, and the ſweet Showers now refreſh the thirſty Earth: The Grain and Fruits now ſhew themſelves to the Joy of the Husbandman: The Trees are all in their rich Array, and the Earth itſelf laden with the Countryman's Wealth; if the Weather be calm, it makes the Farmer ſmile on his hopeful Crop.

" This Month is the prime Seaſon for waſhing and ſheering of Sheep: In forward Meadows mow Graſs for Hay.

" Caſt Mud of Ditches, Pools, or Rivers: This " is the beſt Time to raiſe Swine for Breeders.

" Fallow your Wheat Land in hot Weather; it " kills the Weeds.

" Carry Marl, Lime, and Manure, of what " kind ſoever, to your Land; bring home your " Coals, and other neceſſary Fuel fetch'd far off, " before the Teams are buſied in Hay Harveſt.

" Weed Corn, ſow Rape and Cole-ſeed and alſo " Turnep-ſeed: Now Mildews or Honey-dews " begin to fall.

" Mind your Sheep, as we adviſed you in " *May*.

" Now begin to inoculate: Beware of cutting " Trees, other than the young Shoots of this " Year: Pluck off Buds, where you are not wil- " ling they ſhould branch forth.

" Water the latter-planted Trees, and lay moiſt " Weeds, *&c.* at the Roots of them.

" It is a ſeaſonable Time to diſtil aromatic and " medicinal Herbs, Flowers, *&c.* and to dry them " in the Shade for the Winter; alſo to make Sy- " rups, *&c.*

" Gather Snails, Worms, *&c.* and deſtroy Ants " and other Vermin.

" Set Saffron; plant Roſemary and Gillyflowers; " ſow Lettuce and other Salads for latter Salading.

" Gather Seeds that are ripe, and preſerve them " that are cool and dry; water the dry Beds; " take up your bulbous Roots of Tulips, Anemo- " nies, *&c.*

" Inoculate Jeſſamines, Roſes, *&c.* alſo tranſ- " plant any ſort of bulbous Roots that keep not " well out of the Ground; new-plant Slips of " Myrtle; ſow latter Peas.

" Dig Ground where you intend a Hop Garden, " and bind ſuch Hops to the Poles the Wind hath " ſhaken off.

" Bees

" Bees now ſwarm plentifully; therefore be very " diligent over them; they will require your " Care."

On ſome of the moſt material of the foregoing Articles I ſhall treat; but firſt of all give ſome Account of the King of Grain, Wheat, as the moſt preferable Subject of all others.

CHAP. II.

Of Wheat.

THE way they make uſe of in the Pariſh of —— near Amptill *in* Bedfordſhire, *to weed their green Wheat Crops.*——This Part of the Country lies very low and flat, and is ſubject to ſuffer by Inundations of Waters, which makes their By-roads almoſt impaſſable in ſome Seaſons of the Year; for here their Land is exceeding rich, as it conſiſts of a ſandy and marly blackiſh Loam, which anſwers to Part of the *French* Verſe;

Bonne Terre, mauvaiſe Chemin:
Bonne Teſte, mauvaiſe Femme.

Here their Ground lies in Ridge Lands, both in common open Fields, and in Incloſures; and therefore is always plowed one way: And in the laſt it is very remarkable, that the Bur or Cliver Weed grows among their Wheat Crops every Year, and not near ſo much in the former. To account for this, I know of but two ways, and they are theſe: Firſt, As incloſed Grounds are, for the moſt Part, thoſe that lie neareſt the Farm-yard, conſequently they are moſtly dreſſed with Yard-dung for Wheat Crops, becauſe the leſs Ground the Waggon or

Cart Load of Dung is drawn over, the better it is for the Team, the Driver, and the Cart or Waggon: And as the Land is dreſſed from time to time with Dung, the Burs or Seeds of Clivers that are mixed in courſe with the Dung, grow among the next Wheat Crop, and produce this weedy Miſchief. Secondly, As the Land in common open Fields lies fartheſt off the Farm Houſe and Yard, it is generally dreſſed either by the Fold, or with ſome Hand-dreſſing, that has no Seeds of Weeds among it; and becauſe the Land of open Fields, for the moſt Part, gives the Plough a better Opportunity to kill all Weeds and their Seeds than Incloſures do; for in the former, the Sun and Air dries and ſcorches much ſooner than in the latter, where there is leſs Room for their powerful Influences. And for theſe Reaſons I am apt to believe the Incloſures in this rich-ſoil'd Country are in particular ſo ſubject to be over-run with the Cliver or Bur Weed, that if it is not cleared off in time, it will twiſt and twine about the Stalks of the green Wheat, ſo as to pull it down: And when this happens to be the Caſe (as it every Year generally is, more or leſs), the Farmer will have little Reaſon to expect a full Crop; for this Weed, by its many cluſtering rough Side-ſhoots is ſo heavy (eſpecially after Rains), that it is impoſſible for the Wheat to ſtand erect; and when it is brought into a couchant Poſture, by the Weight of this Weed, it commonly lies in a wet Condition, and thereby ſometimes both Stalk and Ear are rotted, or at leaſt made to produce a very poor lean Kernel, not half a Crop. It is this that obliges theſe Vale Farmers to endeavour the keeping down this troubleſome ſticking Weed in its infant Growth, before it gets Maſtery of the green Wheat: And therefore in *May*, or at the Beginning of *June*, they make uſe of a large Drag Rake, whoſe great croſs Head is furniſhed with

with about twenty iron Teeth ten Inches long, which one Man draws all along a Ridge Land, perhaps ſixty Poles in Length, to break and cripple this Cliver or Bur Weed, that it may not damage the Wheat Crop: And that this may more eſpecially anſwer the End, they generally draw it acroſs the green Wheat with great Labour; for this is very hard Work for a ſingle Man to perform; and yet for all this, their Wheat Crops in ſome wet hot Summers ſuffer very much by this pernicious Weed.

How to prevent this Damage from the Bur or Cliver Weed.——When this Bur or Cliver Weed grows rank, and paſt the Power of the Farmer to keep it from hurting his Wheat, the Damage muſt be great; and if the next ſucceeding Horſe-bean Crop is likewiſe damaged by the Hair-weed, the Farmer conſequently muſt be brought under a double Loſs: For in ſome Seaſons theſe two capital Weeds are above his Match, notwithſtanding all the Care and Labour he can beſtow to conquer them; and inſtead of having their Miſchief leſſened, it will of courſe increaſe, becauſe ſome of them will ſhed their Seed and renovate their Species, with Time. Now to prevent theſe grand Misfortunes, I have this to propoſe, That where the Bur and Hair Weed thus reign, let but a Farmer make uſe of a proper Drill-plough and Horſe-break, and he may utterly extirpate their Breed; that is, Let him ſow his Wheat-ſeed out of a Drill-plough, and hoe with a proper Hoe between the Wheat; and likewiſe ſow his Horſe-beans out of a Drill-plough, and horſe-break the Earth between their Rows according to Art, and he may depend on Succeſs.

How it concerns Landlords to prevent their Farms being damaged by Weeds.—This is a very material Article; for it is notorious by a thouſand Inſtances, that the Thiſtle, the Bur, the Hair, the Poppy,

the Dock, the Cammock, the Cats-tail, the wild Parſnep, the Gould, *&c.* have been the Occaſion that many a Farmer has broke, and not only ruined the Tenant, but greatly damaged the Farm; ſo that after ſuch a Tenant the Rent has ſunk, on account of the Farm's being worſe than it was: Therefore where a Landlord has Eyes quick enough to ſee through this great Evil, if it is in his Power, he ought to prevent it; if the Tenant don't. And as I have formerly given an Example of a Landlord's making a Preſent of a Drill-plough to his Tenant, to improve his Farm, ſo ought many more do the like, rather than ſuffer their Farms to run to Ruin by the Growth and Increaſe of Weeds, and by ſowing their Corn every Year in the promiſcuous or random way, which occaſions it. But for an Example of Induſtry, I here propoſe the Conduct of a moſt diligent and ingenious Improver of his Eſtate, now living in *Virginia*, who is ſo kind as to become my Cuſtomer and Correſpondent.

The curious Copy of a Letter, written by a very ingenious Gentleman from Virginia, *ſhewing the ſeveral advantageous Ways he takes to improve his Eſtate.*

Mr. *Ellis*, *Virginia*, *Jan.* 17. 1743.

SIR,

I Received your Favour of the 14th of *December*, 1742, and ſhould have anſwer'd it ſome Time ago, if I could have made any Trials according to your Directions ſooner. The three Wheel Drill-Plough I alſo received, and the Horſe-break. The Drill I ſoon made Trial of, and at one Foot Diſtance, in *Auguſt*, drill'd eight Rows of Wheat, which ſoon came up, and now has a ſtrong Blade of a Deep-green, and very promiſing, although it

is

is upon an Oath Stubble, after ſix Crops of Tobacco, which we generally get from Ground well dreſſed (by penning our Cattle ſixteen Nights in a Pen), before we ſow Wheat, Barley, or other Grain. Immediately after this I plowed up ten Acres of Wheat Stubble, and ſowed *Indian* Peas in Hills laid off ſo as to admit our Hook-plough croſs and athwart, in order to bring the Ground into a fine Tilth for the Drill-plough; and in ſome meaſure dreſs'd the Land, by ſhading it from the intenſe Heat of the Sun: And in *September* I cut up the Haulm for my Sheep, which would have been much better for the Land, if plowed in; but I was apprehenſive it would obſtruct the Drill-Plough: Therefore I made it into Hay, and plowed up the Ground with the Wheel-plough, which made it extremely fine; then drill'd in Wheat again, at a Foot diſtance; the reſt of my Wheat-Big and Rye I ſow'd in Broad-caſt among my Corn where the Ground was good, and the Land my Tobacco Crop came off laſt Summer, at leaſt two hundred and fifty Buſhels: It all looks ſtrong, with a broad Blade curling on the Ground, and more promiſing than the Year before, though that yielded about ten Buſhels for one, notwithſtanding it was ſown upon a Fallow of worn out Ground, as the former Occupier told me, and laughed at my attempting Things ſo out of the common Road or Practice of the chief Planters in this Colony. Therefore I hope to have near double the Crop this Year, becauſe the Land is better; and by plowing our Corn croſs and thwart, and hoeing our Tobacco, the Ground was in fine Tilth. I muſt confeſs, the drill'd Wheat upon the Wheat Stubble is the moſt promiſing; and as I ſhall hand-hoe it, and plow between the Rows, expect it will yield the better Crop at Harveſt. I have prepar'd a Field of ten Acres for Barley, and ſhall ſow Saintfoin with it, likewiſe

likewiſe Barley and Lucern, which ſhall be ſow'd after Steeping, according to your Directions.

I obſerve in ſeveral Parts of your Books you direct the Sowing or Spreading the ſeveral Sorts of Manure, and then Barley and all to be harrowed in together: And as that takes much Time and Labour, I have, to remedy that Inconvenience, endeavoured to make an Engine Cart, to carry out the Dung, and ſpread it in four Foot Breadth; to which I propoſe to fix a proper Inſtrument to ſow Wheat or any other Grain in the broad-caſt Way, and by fixing a Pair of Harrows to the Axles to ſpread the Dung, ſow the Grain, and harrow it one way at the ſame time with only four Harrows, a Driver and Follower to attend the Harrows. The Cart is to be loaded with rotten Dung, and the Seed-box with Grain is contrived to take off at Pleaſure, with Grain equal to the Ground that the Load of Dung will dreſs; and I think it will be done in a more regular Manner than by ſpreading or ſowing, as it is now practiſed. I need not ſay any thing to you, that are ſo much the better a Judge of the Charge and Trouble that will be ſaved by this Engine, if it anſwers my Expectation. In the mean time you are at Liberty, without naming the Contriver, to mention the Thing, and let me hear how it will be received, if brought to Perfection; and then perhaps it will be worth while to ſolicit a Patent for the ſole making; which I ſhall truſt to you, and allow a reaſonable Share of the Profit.

I muſt now beg your Patience, while I relate the Method I propoſe to put my great Farm into, and beg your Advice in any thing I am wrong. As I am little experienced in the practic Part, it cannot be expected I can be ſo proper a Judge in a Matter of ſo great Conſequence. In the firſt Place, I have laid off my Fields in twenty-acre Pieces, with Lanes proper for Carts; and am now incloſing the

ſame

ſame with a Timber Fence; and intend, in the Spring, to plant various ſorts of Maſt, in ſtrait Rows, for Hedges, that I hope will be fit to ſecure the Ground by that time the Timber Fence decays, and ſhall ſtock my Farm as follows; to wit, Three hundred Head of Black Cattle, forty breeding Mares, thirty Sows, and a ſufficient Number of Sheep to ſupply my Table; which Stock, with the great Quantity of Straw I ſhall make, and the Advantage I have of getting rich, ſlimy, greaſy Fæces out of the River, which runs near ſeven Miles round my Farm, to make annually Manure for ten Fields, at the Rate of five hundred Loads for each Field, twenty Buſhels to the Load; and by incorporating both Sorts together, under Shelter, fit it for my Engine-Cart: And this Ground thus dunged, I intend (if I can get the Favour of you to ſend me one of the Double-ploughs, completely fitted) to plow in two Bouts Stitches, till the Ground is fit for the Reception of *Tobacco*, which we plant in *May* and *June*, as you do Cabbages, at four Feet Diſtance, and hoe and hill four times, which generally comes into the Houſe early in *Auguſt* and *September*, and leaves the Ground in the beſt Tilth for any Grain whatever; and immediately I ſhall ſow Wheat; and upon the Wheat-ſtubble, what you call Bigg, which we find a moſt beneficial Grain for various Uſes; and upon the Bigg-ſtubble I propoſe to ſow Rye, which does not with us require a very rich Soil, unleſs we propoſe no other Advantage but Straw; for unleſs this Grain is fed in our hot Country till late in *March*, it runs intirely into Straw. Upon the Rye-ſtubble I propoſe to ſow Indian Peas and Buck-wheat; which, if it can be got into the Ground by the laſt of *July*, will be equal to the Dreſſing of Dung when it is rolled and plowed in the *October* following; and ſo to lie for a

Barley and Oat-crop, to be ſowed the *March* following. And upon this Stubble I propoſe to ſow Turneps, to be fed off the Winter following, and then to go into Indian-corn, with two hundred Acres more of the natural Ground, which will make in all fourteen hundred Acres, in Tobacco, Wheat, Bigg, Rye, Oats, and Barley. The reſt of my incloſed Ground will be for Paſturage, Hay, Woods, and Dreſſing. This Management will require at leaſt eight Teams and eight Double-ploughs, beſides two Teams to attend the Harveſt; and as it is impoſſible with us to hire Harveſt-people, I ſhall keep an hundred Hands, that will find ſufficient Employment, as I carry on Tobacco and Corn-planting. At the ſame time our Barley and Bigg-harveſt begins, the Firſt of *June*, ſometimes ſooner, Rye and Oats next, and Wheat about the laſt of the Month, or the Beginning of *July*. Therefore, to prepare the Bigg-ſtubble for Rye, the Rye for Peas, and Buck-wheat, the Oats and Barley for Turneps, I muſt put all my Ploughs to work as ſoon as the firſt Field is cleared of the Grain, and turn my Hogs into the Stubble, to gather up all the ſcattered Corn, which three hundred Head will ſoon do. From this Quantity of Ground, if the Year proves ſeaſonable, I may reaſonably expect near two hundred Hogſheads of Tobacco, four thouſand Buſhels of Wheat, four thouſand of Bigg, four thouſand of Rye, two thouſand of Oats, two thouſand of Barley, and ſeven thouſand Buſhels of Indian-corn, beſides fattening my Hogs on the Stubble and Buck-wheat. The Ground lies ſo convenient to my Barns, that I can eaſily get in twenty Waggon-loads a Day, which induces me to believe they will be ſufficient; otherwiſe I can eaſily aſſiſt them, by putting ſuch Rails to my Dung-carts as I have ſeen made uſe of in *England*.

The

The Secret you mentioned, for preventing the Fly, Slug, and Snail, deſtroying our ſeedling Turneps, I dare ſay, accompanied your Letter, publiſhed by yourſelf; if not, you would oblige me much, juſt to hint to me, and I will make uſe of in ſuch a manner, that no Perſon, without your Conſent, ſhall know of it, that I may try it on my Tobacco-plants, which is the only Vegetable that ſuffers by that ſort of Fly in this Climate.

You may depend on all Occaſions to hear of my Succeſs in any Undertaking, agreeable to your Directions. I am very ſenſible of the Roguery of the *London* Corn-chandlers, having had ten Poundſworth of Seed at a time from Mr. *Forward*, not worth a Shilling: Therefore, as I depend much on your Integrity, I muſt deſire the Favour of you to procure for me the following Things; and, by the firſt *London* Ship, I will ſend you a Bill of Exchange for ten Pounds to pay for them, and ſatisfy you for your Trouble. Firſt, A complete Double-plough, with a Carriage, as a Sample, to make a ſufficient Number for my Farm: And, that I may get into a right Sort of Seed, four Buſhels of Sprat-barley; four of rathripe Barley; four Buſhels of the beſt Sort of Wheat, for my ſandy Land; one Buſhel of Horſe-beans; one Buſhel of Rape-ſeed; and, if any Money remains, after a Guinea or two for your Trouble, ſend it in what you think moſt uſeful.

I truſt in God, if I ſhall have my Health, I ſhall get in great Forwardneſs in one Year more; and then I ſhall want your Aſſiſtance to procure me a moſt ſkilful Ploughman, and a Perſon uſed to ſuckle Calves and Lambs, and a Dairy-maid to ſupply a growing Town near my Farm; in the mean time, be pleaſed to let me know if ſuch Servants are to be had, upon advancing their Wages

a little, for a Term of four Years each, and their Paſſage paid. I would have obliged you with a Draught of my ——— Mill; but a very ingenious Gentleman having undertaken one, I laid aſide my Deſign, till I ſaw his Succeſs; and if his Contrivance does not anſwer, I ſhall go on with mine, and, when complete, I will oblige you. I am ſo laughed at for going out of the common Road, that, till I ſucceed, you need not expect any other Correſpondent from this Colony. I am, Sir,

Your moſt obliged humble Servant.

Pray charge the Poſtage in my Account.

The Character of a certain indolent Farmer, who broke merely by ill managing his Farm.———In this Gentleman's Letter, all Landlords and Tenants of Farms may behold, in part, what is incumbent to be done by them, *viz.* the Improvement of their Land, by ſtudying, after his Example, to make or purchaſe new and better Inſtruments of Husbandry, than we have in moſt Places at preſent; the beſt ways of plowing and ſowing a right Seed, in a manner moſt agreeable to their Ground, and at a time of Year moſt ſuitable to their different Soils; the ſort of Cattle that will anſwer to the greateſt Profit; and, in particular, how to come by the moſt ſkilful Ploughmen, and other Men and Maid-ſervants; and many other things, that will turn to their greateſt Account; which leads me to make ſome Obſervations on a contrary ſort of indolent Farmer, whoſe Character take as follows; *viz.* This Farmer, and his ill Practice, I and many others knew; for he was a frequent Subject of Talk in his Neighbourhood, becauſe, firſt, he ſeldom gave his Land more than half Plowings, which always occaſioned a rough Tilth at Sowing-time, and the Produce of wretched Crops of Grain and Graſs; for by ſuch a rough

ſour

ſour Tilth, he buried part of his Seed, that never grew; and by not killing the Weeds thoroughly by often and good Plowings, they ſometimes got ſuch Dominion as to weaken his Crops. Secondly, He ſowed his Ground ſeveral Years together, without giving it Reſt to be ſweetened and cleaned by Fallowing once in three or four Years; which wore it out, and brought it into ſuch a Barrenneſs, as bred the Black Bennet-weed, the Thiſtle, the Horſe-gold, the Poppy, wild Sorrel, Chick-weed, May-weed, Cliver, and others. Thirdly, To keep down theſe Weeds, I have ſeen this very Man, with a Weed-hook, cutting up Thiſtles on a *Sunday*. Fourthly, By not getting his Ground in right Order, with good Plowings, in due time, he was obliged to ſow his Seed later than moſt others, which made his Barley and his Lent-grain run into Straw, more than it would have done, had he ſowed it earlier; and at laſt became ripe after that of his Neigbours, who ſowed their Seed more forward, to his great Loſs; becauſe the Days were ſhorter, and the Nights longer, than before; which expoſed his Grain more to the Damage of Rains and Dews, and leſs to Drying and Hardening. Fifthly, He never full-dreſſed his Ground, which made him have lean Crops. Sixthly, For want of ſowing Clover, or other artificial Graſs-ſeeds, in a ſufficient Quantity, his Horſes, and other Cattle, were always poor; and the firſt not able to plow his Ground to a right Depth, capable of extirpating and killing the deep-rooted Weeds. Seventhly, He kept a greater Number of Sheep than his Farm could maintain, notwithſtanding he had a Common near him, which being every Day full ſtocked with other Farmers Sheep, his ſixty would not bear Folding, without pining and growing lean, for want of a Bait every Day with good Graſs in an incloſed Field; for you muſt know this Farmer

lived

lived in the Chelturn-country, where Land is not ſo good as in the open Field Vale-countries; and thus he came by the Loſs of moſt of his Flock in one Summer and Winter, that died by the Hunger-rot. Eighthly, He ſeldom or never changed his Seed, which now-and-then was the Cauſe of a ſmutty Crop of Wheat. Ninthly, This Farmer was ſo covetous of Time, that he has bound and carried his Wheat-ſheaves into his Barn on a *Sunday*, by Hand-carriage, when they lay in a Field contiguous to it; and, indeed, would do as much Work on a *Sunday* as another Day, where Shame and the Law did not prevent it. Tenthly, Where an Opportunity offered that he could pilfer from his Neighbours, and evade the Penalty of the Law, he ſeldom was wanting in doing it: But, at laſt, this Miſcreant met with his juſt Deſert; for he run out a conſiderable deal of Money, and broke. For theſe Reaſons it highly concerns Landlords to make a right Choice of Tenants, by ſtrictly inquiring into their Character at the Place they came from; for a bad Tenant, notwithſtanding all the Covenants that can be crouded into a Leaſe, may do a great Damage to his Farm, by his Ignorance, his Poverty, or his Roguery: By the latter many ways; one of which I have heretofore given a ſhort Account of; how a Tenant, that was obliged to quit his Farm, ſowed wild Oats, in the Night-time, for Revenge, to hurt the ſucceeding one, and oblige the Landlord to abate Rent for the ſame. But when a Farm happens to be lett to an induſtrious, ſkilful, honeſt Tenant, he deſerves good Encouragement, becauſe his right Management is a Benefit to the Landlord, himſelf, and, indeed, to the Nation in general: An Inſtance of which I ſhall give in the following Account.

The Encouragement that a certain Lord gave to his Tenants, to provoke them to practiſe Good huſbandry.—This

This was done by an *Iriſh* Nobleman, who wiſely conſulted thoſe whoſe Province it was to know Improvements in Huſbandry better than himſelf, becauſe they made it their main Buſineſs to find out thoſe Secrets that might be of Advantage to their Country; as one of our News-papers mentions it, dated the 14th of *May* 1744. in theſe Words:— "The Right Honourable the Earl of *Clanrickard*, "deſigning to give one hundred and fifty "Pounds, to be diſtributed in Premiums, for the "Encouragement of Huſbandry, to the Tenants "of his Lordſhip's Eſtate, has wrote to the Se- "cretary of the *Dublin* Society, to requeſt that "the Society will communicate to him what may "be moſt proper to encourage, in order to raiſe "a Spirit of Emulation and Induſtry in that Part "of the Country where his Lordſhip's Eſtate "lies."

The Encouragement given by the Iriſh *Nobility, Gentry, and others, to the* Dublin *Society, for promoting the moſt uſeful Art of Huſbandry.*——— The following Words were inſerted in one of our public News-papers, *viz.*——"This Week the "*Dublin* Society returned Thanks, in a public "Manner, to the Nobility, Gentry, and others, "who have ſo generouſly ſubſcribed for enabling "the Society to give Premiums for the Encou- "ragement of Huſbandry and other uſeful Arts "in this Kingdom. The Sum ſubſcribed amounted "to ſix hundred and eleven Pounds ſix Shillings "and Six-pence.

The Encouragement given by the King of France *to his Subjects, for promoting Good-huſbandry.*——In another of our public News-papers are theſe Words:——"It is ſaid the King of *France* en- "courages it ſo, that he ſells Corn cheaper than "we or any other can, beſides finding his Army "and People.——Alſo, that if any one does a

"Farmer

Farmer Damage, he is more ſeverely puniſhed here than if he did it to any other common Perſon. And, indeed, it is very juſt it ſhould be ſo, ſince on the Farmer's Crops of Grain and Hay, on his breeding and feeding of Beaſts and Fowls, and on the Fruits of his Land, *&c.* depend the Riches of a Nation.

Why Farmers, more than any Tradeſmen, ſhould be protected by the Laws of the Land againſt the Rapine and Oppreſſion of vile Perſons. —— The Goods and Chattels of the Farmer are more than any other Traders expoſed to the Rapine of Thieves, and to the Oppreſſions of vile Perſons, becauſe of his dead and live Goods lying abroad in Fields and Woods, and in moſt Places at ſuch Diſtances, that they may even in the Day-time do him a great deal of Harm unknown to him: But in the Night-time they have a much greater Opportunity of doing him Miſchief, either by ſtealing his Grain, ſtealing or maiming his Cattle, or pilfering his Fruits, his Fiſh, his Wood, or many other Things. One Example of this happened at *Gaddeſden* (as I am informed) in Queen *Anne*'s time, when an idle luſty Fellow, named *Daniel Freeman*, was told, by way of Friendſhip, by a Yeoman of 100*l.* a Year, that it was a Preſſing-time, and he would be preſſed for a Soldier, if he did not keep cloſe to work. Now it happened, that this very Fellow was pricked down to be preſſed by another Perſon: However, the Rogue ſuſpecting, from the Words of the above Intimation, that the Yeoman was the ſole Occaſion of it, he, one Night, cut the Sinews of two of his Plough-horſes, as they were at Graſs, in the fore great Point of the Horſes Thighs, that intirely ſpoiled one, and crippled the other. But this Villainy availed him nothing; for, after he had been ſurrounded in a Houſe, he was forced to ſurrender, and was ſent for a Soldier.

Another Farmer, ſince that, having a blind Cart-horſe grazing in his Home-cloſe, ſome Perſon, out of Malice, drove the Beaſt into a Dell-hole that was in the ſame Field, made by a former Tenant's digging Chalk out of the Earth to dreſs his Ground with; wherein, by the Vehemency of the Fall, the Horſe's great fore-part Joint of his Thigh was ſo cut by Flint-ſtones that lay in the Bottom of the Hole, as made him of no Service afterwards. Others, out of the ſame wicked Principle, lame our Sheep or Cows, break our Gates, Stiles, and Hedges; and ſome, out of Covetouſneſs, will ſteal our Wheat, as it lies in Stacks in the Fields, our Barley, our Peas, and our Beans, our Poultry, or any thing elſe that they can come at, and carry away, free of the Penalty of the Law. I know a Perſon, living at this time, that has reigned theſe 30 Years in getting Part of his Livelihood by ſtealing of Sheep; and although he has been detected, and taken ſeveral times into Cuſtody, yet the Farmers have, for a Treat, or ſome other trivial Conſideration, releaſed him, and ſet him free again: Which ſerved to harden him in his Wickedneſs; for he went on in the ſame ſtealing Trade, even after the Act of Parliament commenced for making ſuch Thievery Felony: But if he had been ſent to Gaol, and afterwards got releaſed, they were apprehenſive he would revenge their taking the Advantage of the Law againſt him, and ſo perhaps become the Ruin of a poor Tenant. ——Others had rather loſe their Goods than be at the Charge of going 20 or more Miles to attend a Proſecution, as it ſometimes is to the Place of the Aſſizes.——Others will not proſecute ordinary Thieves that live by ſtealing Sheep, Corn, Wood, Poultry, Swine, *&c.* and have Families to maintain by this very Trade, leſt they (being Part of the Pariſh) be bound afterwards to maintain

their Families, as is the Condition of many Places in *England*.———Others, when Thieves are taken and profecuted, and come to their Trial, they being for their Lives, no Evidence will nor ought to be taken, but what is very clear; and where it is ſo againſt one, either through Miſtakes, or wilful Omiſſions, it is deficient againſt five; by which means moſt of thoſe few that come to Trial are found Not guilty. Again (as a judicious Writer obſerves), when they are upon Trial, and the Evidence clear againſt them, either the Jury are tender of their Neighbour's Life, or elſe ſome good Friend or other appears, that it is found but Petit Larceny; or elſe the Thief has his Clergy, or by ſome ſuch Shift or Means, or Evaſion, he gets off; ſo that it may be, as it often happens, a Thief comes five or ſix times to his Trial, or at leaſt to Gaol, before he is hanged; during which time he grows more ſubtile, and educates many others in the ſame Profeſſion, and teacheth them all manner of Tricks and Devices, not only to effect their Intentions, but to avoid the Puniſhment.

To remedy which, if the Law is made more in the Farmer's Favour than it is at preſent, that all Offences committed againſt him ſhould be more ſeverely puniſhed, than if committed againſt any other Tradeſmen or Dealers, and he more indulged in the Charge of Proſecution than others; I humbly conceive it would be a great means to deter Thieves from doing him Damage, either by Night or by Day.——For there is no more certain and pernicious Enemy to the Husbandman's Thrift than Man himſelf. They rob and ſteal from, oppreſs, malign, injure, perſecute, and devour one another, to the Decay of Arts and Sciences, and even to the Ruin of whole Families of ingenious and induſtrious Men; every one ſtriving to build up his Houſe, and raiſe his Family, by the Ruins

and

and Decay of his Neighbours. But our only Complaint is againſt the common and ordinary ſort of vile Perſons, that live after a moſt ſordid manner, and ſeek not Wealth nor Greatneſs, but only to maintain themſelves in a moſt deſpicable, lazy kind of Life, by filching and ſtealing from their honeſt and laborious Neighbours; and againſt ſuch, that though they ſteal not, yet oppreſs, oppugn, and injure thoſe that are more induſtrious than themſelves.——What a great Loſs and Inconvenience it is to be confined to dwell by ill Neighbours! How it multiplies our Cares, and increaſes our Labours, and leſſens our Stock and Profits! How are we diſquieted at the Sight of them! And how are our Fruits deſtroyed, and our Corn ſpoiled, by them, and their Children and Cattle, who are continual Treſpaſſers! eſpecially if they think we are ſo peaceably given as to put up ſmall Injuries, or that we are unwilling to ſeek Remedies worſe than the Diſeaſe, againſt theſe Enemies of our Good-hulbandry, and of our otherwiſe moſt happy Life.

But, to prevent theſe, it is to be hoped Laws will be eſtabliſhed in the Farmer's Favour, which we humbly leave our grand Patriots to conſider of; on whom we Ruſtics depend for good and wholſome ones to preſerve our Intereſts; which will the better capacitate us to ſerve his Majeſty, and anſwer his Occaſions with our Fortunes, as well as with our Lives; and will alſo the better enable us to pay our Rents to them, and improve theirs and the whole Kingdom's Revenue.——In the mean time ſome Policy may be uſed to charm theſe Crocodiles, to make theſe Furies Friends; pleaſe a little their Natures, and feed their Humours in what they delight: By being thus their ſeeming Friends, you may command them; and they will be as ready to ſerve you, as to perſecute another Neighbour, that leſs deſerves, only becauſe he uſes not

the ſame Method of Policy. If they love their Bellies, invite them often: Be ſure to pleaſe them that are moſt capable of doing you Hurt: Whatever they delight in, pleaſe them in it, and you have done enough; for you know not what need you may have of a Neighbour's Help. Thieves may ſometimes aſſault you; ſometimes you may want ſome particular Inſtrument that your Neighbour hath, without which, or whilſt you go farther, you ſuffer great Loſs; and what a ſad thing it would be to be denied?

How the learned Mr. Boyle *encouraged Arts and Sciences.*—This honourable and juſtly famed Philoſopher is well known, by his printed Works, to have been one of the moſt conſiderable Men in his time for his great Knowlege in Natural Philoſophy, for his Piety, and for his encouraging of Arts and Sciences, *&c.* which laſt he had ſuch a Veneration for, that he now-and-then gave twenty or thirty Guineas to Travellers for Secrets that had been well atteſted; as believing that Perſons of leſs Learning than himſelf had, might find out and be Maſters of ſuch ſerviceable Secrets that he could not diſcover; at leaſt, that ſuch Secrets might help his greater Knowlege to improve them to a higher degree of Uſefulneſs: So that Travellers came more ſatisfactorily off with him, who was a Miniſter of State, than *Edmund Spencer* did with the Lord Treaſurer *Cecil*; who being ordered, by Queen *Elizabeth*, to give him 500*l.* in conſideration of this ingenious Perſon's Poverty, and of the Poem that he preſented her with; this Lord, inſtead of giving him Five hundred, gave him only One hundred, telling her Majeſty——What! would ſhe give ſo much Money for a Song?——This he is ſaid to have taken ſo much to heart, that he contracted a deep Melancholy, which ſoon after brought his Life to a Period, *Anno Dom.* 1598. though he was accounted

counted the firſt of our *Engliſh* Poets that brought Heroic Poetry to any Perfection, and was an excellent Linguiſt, Antiquary, Philoſopher, and Mathematician. But the firſt Poem that brought him into Eſteem is ſaid to be his *Shepherd's Kalendar.* And it is remarkable, that Mr. *Boyle* took ſo much Delight in this ſort of Encouragement, that he uſed to ſay—" We may frequently learn ſome-" thing worth obſerving from theſe ſort of Tra-" vellers."———But it is likewiſe more neceſſary than ordinary to protect a Farmer againſt Thieves and Inſulters rather than Tradeſmen, becauſe moſt of the Farmers live in ſingle Houſes, remote from Towns and Villages, and therefore are more liable to be robbed and inſulted.——In our Village of *Gaddeſden*, becauſe it lies three Miles diſtant from the neareſt Market-town where a Juſtice of Peace lives, ſome of the Inhabitants are every now-and-then inſulted to a very high Degree by Vagrants. I have ſeen one of theſe that begged, having but one Hand, throw a Stone with the other againſt a creditable Woman, becauſe ſhe would not relieve him; and had it hit her in ſome Part, was big enough to kill her: Another, with a ſham plaiſter'd Arm, clapt his Foot between the Door and the Threſhold to prevent ſhutting it, when he ſaw there was an Opportunity to get ſomething by his Swearing, and inſulting Impudence (a reigning ſort of Villainy), as knowing, at the worſt, it will be only the Stocks, or other light Puniſhment; and even this they are hardly afraid of in ſuch By-parts, becauſe a Conſtable at a Diſtance is difficult to get, and then it will coſt a Pariſh conſiderably to proſecute theſe Villains. Others of them keep Dogs that will nimbly ſeize our Poultry for their Maſters to carry off; and this they eaſily do, as the Hens ſtraggle in our Fields. But it is to be hoped the Legiſlature, this next Seſſion, will,

when they amend the Black Act, level a ſevere Law againſt all thoſe Vagrants who ſhall in any wiſe inſult or damage Farmers.

The Author's Anſwer to that Part of the *Virginia* Letter relating to Inſects damaging young Tobacco and Sugar-plants; and the great Service that the *American* Gentleman's Engine may do to *Britain*.

Little Gaddeſden, 30th June, 1744.

SIR,

YOUR Letter of the 17th of *January* laſt I received on the 22d Inſtant; and among its many Articles find one, that in particular you deſire to be reſolved in: And, indeed, this your Curioſity has led you into a Matter of the greateſt Importance; ſuch a one that I ſhould not impart, was it not that I know you to be a Perſon of Juſtice, Honour, and Generoſity: And therefore, without heſitating, I am very proud of this Opportunity to pleaſure you with one of the moſt profitable Receipts I am Maſter of; and that you may enjoy it with the greater Expedition, I have taken this early Opportunity to convey it to you, in hopes it may do you many hundred Pounds worth of Service, in ſecuring your young Tobacco-plants from the Damage of the Flies, which in your hot Country I ſhould think are more than ordinary liable to commit their Rapine, and ſpoil your Crops, while they are in their Infant Growth. However, this will infallibly ſecure not only your Tobacco-plants, but likewiſe Crops of Turneps, Rapes, Flax, Hemp, artificial Graſſes, or any other Field-vegetable, and all manner of Garden-ware, from the Damage of the Fly, the Slug, the Shell-ſnail, the Worm, *&c.* while in their firſt and tender Sprouting; and, at the ſame time it is thus acting the

the Antidote, it will become a fertile Manure for any Ground it is laid on. It is no Powder, may be had at any time of the Year with you, and is a cheap Ingredient that will withſtand the Power of Rains; for if they fall, preſently after its Application, for a Week together, it will ſtill have the deſired Effect, provided it is laid on ſoon enough: Which Secret I am willing to impart to you, upon this Condition, That, if it anſwers my Pretenſions, you will pay me —— otherwiſe nothing; which is putting the Matter on ſo fair an Iſſue, that I hope there is no room for Exception. And I do aſſure you, I have thought this Secret of ſuch high Importance, that I never yet diſcovered it to any more than two Gentlemen, one of whom lives in *England*, the other in *Antigua*; for the latter, I delivered the Receipt to ——— Eſq; a great Merchant in *London*, who ſent it about ſix Weeks ago to his Correſpondent, for ſecuring his Sugar-plants from a certain Inſect that breeds in the Ground, and after ſome time acquires a ſort of Shell-wings, that makes it the more capable of doing Miſchief in leſs time than if it had none; for which Receipt he has given me his Word of Fidelity, that I ſhall not only receive ——— from his Correſpondent, but a Contribution from all the Gentlemen in the Iſland, if it anſwers the Purpoſe. Upon the ſame Footing I ſend the like to you, that in caſe it does the Feat, and if any other Gentleman in your Parts make uſe of it with the like Succeſs, then I hope you will be ſo much my Friend as to endeavour a like Contribution from them; who, I am perſuaded, are Perſons ready to encourage ſerviceable Arts and Sciences, as they enjoy what they now do partly by Improvements formerly made in Agriculture; to which Art I have not a little added, as by its preſent Practice in *Europe* plainly appears. And I hope to be further inſtrumental in this profitable

fitable and boundleſs Art, by ſending into the World twelve more Monthly Books of Husbandry, which I have now begun, and finiſhed the firſt ready for the Preſs, that are to be as voluminous as any of my former Monthly Books were; for I am, by one means or other, almoſt daily learning Improvements of one kind or other, by Correſpondents, and my own and Neighbours Practice, *&c.* The Receipt is as follows, *viz.* ——Now although this Ingredient may appear at firſt a trivial and common one, even as Soot in time paſt, through Ignorance, was thrown away to Dunghils; at this time it is found to be of ſuch Efficacy, that the Aſſurance of a Crop of Turneps, *&c.* was never rightly given, till this was diſcovered, and made uſe of, which, when publicly known in *England* and elſewhere, will do infinite Service. Nor is it to be wondered at, that ſometimes the greateſt things are ſeen to be produced by the moſt common, as Biſhop *Berkley* juſtly obſerves in his Treatiſe on Tar-water lately publiſhed; where at *Pag.* 11. he has theſe Words:——"The Folly of Man rateth "Things by their Scarceneſs; but Providence hath "made the moſt uſeful things moſt common."—And a happy Diſcovery this is; for in ſome Years moſt of the Turnep and Rape-crops in particular have been ruined by the Fly and the Slug, notwithſtanding Farmers have *re-ſown* the Seed two or three times in one Seaſon. And (what is alſo very valuable in this Ingredient) it does not taint nor burn the Vegetable, like Soot or Lime; nor is its Virtue to be waſhed out, like them or Tobacco-duſt, Malt-duſt, or Oil-cake-powder; nor are its Parts ſmoothed by the repeated Fall of Rains, and rendered ineffectual, like them or Chaff; but will retain its Virtue a long time in all Weathers.

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As to your Cart-machine to ſow Dung and Corn, and harrow them in at the ſame time, I like it extremely well; but then it muſt be a ſort of pulverized Dung, ſuch as the *Kentiſhmen* for the moſt part make uſe of, by digging up Mould under or cloſe to their Hedges, or elſewhere, and mixing it with long Dung out of Yards, Stables, Cow-houſes, and Hog-ſtyes, and with ſmall Chalk or Lime. This, by turned Incorporations with Lime, will be reduced into a ſhort Body, fine enough to be ſown, and ſpread out of a Cart, and worked by Harrows. It is certainly doing the thing in the greateſt Perfection, becauſe it will ſow Seed and Dung, and work all in a regular manner; and I think is perfectly neceſſary; for there are thouſands of Quarters of Corn loſt in one Year by the Application of long Dung, that choaks the Seed, and hinders its coming up, and which cannot through its Bulkineſs aſſiſt all the fine thready Roots of the Grain, which a finer Sort will; and will not ſmut the Wheat-crop, like raw long Dung; for Dung, thus managed in a right manner, may be ſaid to be cured. Seed alſo ſowed wrong, is the Cauſe of great Loſſes. If, therefore, you think fit to ſend the Model over, I ſhall execute your Orders in the exacteſt manner I can; and give you my Promiſe, I will take no Advantage of it to your Prejudice, but do all I can to promote your Intereſt, who ſo juſtly merit it.——The new-faſhion Dairy-tackle may be of Uſe to you; and, in time, I hope to oblige you with an Account of an improved Cart or Waggon. You ſhould have another ſort of Drill-plough, and another ſort of Horſe-break, ſent you over, than that you have already, for very good Reaſons; as likewiſe the Turnep-ſheim, a Marſh or Bog-plough, a Trenching-plough, and the new-invented Swing-plough, that your large Farm may be completely furniſhed;

for upon the Variety of Inſtruments of Husbandry depends the main Part of the Farmer's Profit, becauſe he can employ a Tool according to the Nature of his Ground and the Weather. But ſo far as you have proceeded turns my Reſpect into Admiration, to find you ſo inventing and penetrating into Improvements, and repoſing a Confidence in me a Stranger; when our *Engliſh*, that have far a better Opportunity, neglect many of the main Things needful to theirs and their Poſterity's Intereſt. Surely this dull, ſupine Spirit of Indolency reigns more in *England* than in ſome other Countries. We have no Occaſion to ſend to *Ruſſia* and *Italy* for Flax and Hemp, to *France* for Wine and Brandy, to *Norway* for Deals and Maſts, nor for many other Things into foreign Parts, if we would more ſtudy and practiſe Improvements at home: But ſo far from this, that even I, who have done, and am like to do more, conſiderable Service to my Country, am forced to ſell my Copies to the Bookſeller for a Song, becauſe I cannot come by better Encouragement; for I could never meet with any Bookſeller in *London*, beſides Mr. *Osborne*, who would give me ſo much as five Guineas for each Monthly Copy, that I am generally three Months about compoſing, and writing fair for the Preſs, where he has 750 of theſe Books printed from each Monthly Copy, that he ſells for 2 *s.* apiece; and this chiefly becauſe they are ſo ignorant of a Book of Husbandry as not to know its Worth; and it is this Bookſeller's mean Price, I muſt own, that cramps the Sinews of my Endeavours for the public Good, in a great degree.

The

The Copy of a ſecond Letter from *Virginia.*

SIR, *Virginia, June 6th,* 1744.

INcloſed I ſend you a Bill for ten Pounds, according to my Promiſe, to be applied according to my Letter ſent this Spring. I have not time to add, but that

I am your moſt obliged Servant.——

This honourable Gentleman, as well as ſome other Gentlemen-planters of *Virginia*, and *New-England*, I have juſt Reaſon to praiſe for worthy, honeſt, generous Gentlemen, as by their ingenious Correſpondence, and punctual Payments to me, they have made it appear; and I would take their Words of Honour with as much Satisfaction as I would any other Gentleman's in *England:* And it is my real Belief, that if any Man or Woman, Boy or Girl, thinks it their Intereſt to go over for four Years into either of theſe Colonies, they may as ſurely depend on the Veracity of any of theſe Gentlemens Promiſes and Agreements, as on any made by an honeſt Gentleman in *England*; and for which their Service they will give great Wages, and good Uſage, while they live with them in theſe temperate Climates.

CHAP. III.

Of Meadow-Ground.

THE Damage that Meadow-grounds are ſubject to.———There are two Sorts of Meadow-grounds, the Upland meadow, and the Vale-meadow, *&c.* The firſt is generally freer from Moſs, Ruſh, and other Excreſcences, than the laſt; yet

both Meadows, as well as plowed Ground, are quickly ruined, if not husbanded. The Upland-meadow, tho' leſs ſubject to run into Moſs than the low wet Sort, will acquire this foul and moſt prejudicial Weed, if Means are not uſed to prevent it; for all ſorts of Graſs-grounds will, more or leſs, moſs, as Iron ruſts; and the more, if it is every Year mowed, and not dreſſed; becauſe Moſs grows the cloſeſt together of any Vegetable; its Roots miſs hardly any Part of the Ground that they do not draw Virtue from, to nouriſh their Growth; which conſequently muſt ſtarve the Roots of the Graſs, where this ill Neighbour reigns Maſter, and gets the Dominion; which reminds me of a bad Husbandman's Management in this reſpect.

How an Upland-meadow was ſpoiled by Moſs. —— This upland incloſed level Meadow I knew very well, and that its Graſs was ruined merely by Bad-husbandry, becauſe it was occupied by its careleſs idle Owner, with ſeveral other Fields of plowed Grounds; who, indeed, was a perfect Sot, as his Behaviour at an Alehouſe in particular proved him to be; for here it was notoriouſly known, that he would commonly ſit and drink in ſuch a covetous manner, as to tell another in Company it was his Turn to drink, before it really was; which Courſe of Life led him into ſuch Neglect of his Farm, that it ſoon run to Ruin; and, indeed, at laſt ruin'd him; for his Farm was ſold to pay his Debts. But, a little before this happened, to clear off the Moſs this five Acre-field had acquired, that grew ſo high as to reach up to the Ancles of a Perſon that walked in it, he got a Bull to be baited in this Meadow, to kill the Moſs by its Trampling, and that of the Dogs and Men. But this, though it might be ſaid to check it, did not near cure it; for the Moſs grew and increaſed ſo powerful, as to cauſe

cauſe this Field to return no more than half a Load of Hay, in all, in one whole Summer.

How three hundred Acres of Grazing-ground were over-run with Mole or Ant-hills; and how another fine Vale Grazing-ground was in the ſame Condition; and how they were both cured.——The firſt of theſe that I have heretofore mentioned, was the ſad Caſe of Part of a moſt large noble Park, ſituated about eighty Miles diſtant from *London*, where 300 Acres were over-run with Mole or Ant-hills; ſome ſingle ones of which were a Cart-load; for as theſe are commonly firſt made by the Moles, and afterwards poſſeſs'd by innumerable Companies of Ants, they by long Poſſeſſion increaſe them to a prodigious Bigneſs; and ſtood ſo cloſe together, both in this Park and in the Vale-meadow, that there was hardly any vacant level Ground between them. Upon this the Lord's Steward applied himſelf to me for a proper Plough, to cut up and deſtroy theſe Ant-hills; and, for only twenty Shillings, I helped him to a complete ſtrong one, made by a rare Workman, after the neweſt Faſhion, that effectually anſwered his End, by clearing the Park, in a little time, of theſe peſtiferous Hills, that poiſoned the Grazing-ground; for where theſe grow in abundance, there is but little Graſs on their bald Heads, and not much on their Sides; and that, as is very probable, may be unwholſome to the Beaſts, as the Dung of the Ants, with their Piſs, is mixed among it. So that the Lord and his Anceſtors muſt have ſuſtained a very great Loſs by this means, becauſe they certainly loſt vaſt Quantities of Graſs or Hay, in ſo many Years that theſe Hills have been making, which they would otherwiſe have enjoyed, had the Place where theſe ſtood been a clear level Graſs-ground, as now it is made, by the main Help of this excellent Ant-hill-plough, that does more Work in one Day than twenty Men

can

can do. Thus both theſe Grounds were cleared of theſe odious Hills; which when I behold in any incloſed Place, I am ready to believe the Poſſeſſor to be a very negligent Perſon, or a very ignorant one; but thoſe that take them away, and cure the Ground of them, to be as diligent and wiſe, becauſe they do not grudge to lay out a Peny to get a Pound, which, in this reſpect, may be juſtly ſaid of ſuch. But the Work does not end here; the plowing and cutting up of theſe Ant-hills by this Plough, with the Help of another cheap Inſtrument, was not all the Cure. After all theſe were cut through, Men with Forks and Shovels laid the Earth in Heaps in this Park, to be burnt to Aſhes: Then Graſs-ſeeds were ſown over all the Ground, and harrowed in, and the Aſhes ſown on them; which not only nouriſhed the ſprouting Graſs-roots, but bred a Honeyſuckle-graſs beſide; ſo that in two or three Years time the Place, where theſe naſty foul Ant-hills ſtood, became full furniſhed with a moſt excellent Graſs. But tho' this Lord's Steward took the Method of burning his Ant-hills into Aſhes, to improve the Ground by them, the other Lord's Ploughman did not; for here, after the Ant-hills were all plowed, and cut from the Surface, Men followed, and with Forks and Shovels laid the Earth in ſuch large Parcels as rotted in time; and, when rotted enough, it was ſpread over the Ground, to encourage and aſſiſt the Growth of young Graſs, that naturally and ſpontaneouſly came up. Thus both Places, that lay above a hundred Miles diſtant from each other, were intirely cured of theſe great old Ant-hills, and the Ground thereby brought into a fine level Condition, whereon grew afterwards the beſt of Graſs. Since which another Lord has done the ſame, by ſending for one of theſe Ploughs, and clearing his Park in *Oxfordſhire*, by it, of thoſe Ant-hills that have,

have, time out of mind, been increaſing; and now enjoys the Benefit of a great deal of good Ground, that before lay waſte. And yet for all this, and the public Notice that I have given in my former Books, that I furniſh this Sort of Ant-hill-plow to any Perſon at a very cheap Price; there are many thouſand Acres of Ground ſtill moſt ſhamefully ſtocked with theſe Ant-hills, that do not yield their Owners a Quarter of that Profit that they might enjoy, if they were ſerved as the aforeſaid Lands were. How ſtupid, then, muſt theſe Perſons be, and wanting to their own Intereſt, who let their Land lie ſo abuſed by ſuch Ant-hills, and yet may be thus eaſily cleared of them! Surely, if it was only to avoid the Ridicule and Cenſure they juſtly bring themſelves under, from paſſant Travellers, for letting ſuch a wild Sight of filthy Ant-hills appear to them, one would think it enough to incite them to remedy this great Evil in all haſte; for where many of them lie expoſed (as many do in Graſs-grounds but a few Miles off *London*), the common Queſtion is, Whoſe ſlovenly Ground is that ſo over-run with Mole-banks, or Ant-hills? But as I have formerly wrote on this, and the Weeds that by ill Husbandmen are ſuffer'd to grow in Meadow-ground, I ſhall ſay the leſs here, and proceed to give ſome Account of the better ſort of Management, relating to Graſs and plowed Lands.

How a Gentleman improved his Meadow-land.— This Gentleman, being obliged to take his large Farm into his own Hands, had a certain low Meadow, that contained fourteen Acres, which had a Pond in the Middle of it, that ſerved as a Receptacle for receiving all the Waters, that might otherwiſe ſtand and hurt the Graſs; ſo that there was here no Occaſion for any ſubterraneous Drains, except ſuch as lay always open at top, of about a

Foot deep, and a Foot wide, that ſerved to carry the Waters from all Parts of this Meadow into the Pond; and, when this was full, there was a Conveniency made for the overplus Water to go off into a lower Ground. This Meadow being thus always kept dryiſh, it did not ſuffer by Inundations: However, the former Tenants would not be at the Charge of aſſiſting this Field with any Dreſſing; but kept every Year mowing it, till indeed they had much impoveriſhed it, notwithſtanding it naturally was a very rich Soil. The Landlord, finding it in this poor Condition, and having a Potaſh Kiln near him, bought great Quantities of this Manure, which, in *April*, he had thrown about this Meadow with a Shovel; but, a dry hot Summer ſucceeding, it did little or no Good: But the next Year, and for ſeveral ſucceeding ones, it produced vaſt Crops of excellent Graſs.

How a Tenant improved a Meadow.—A Tenant, a very induſtrious diligent Man, who rented a Farm of ———, Eſquire, in *Hertfordſhire*, having a Three-acre Graſs Field that produced little elſe but Weeds, by reaſon of the Waters that frequently lodg'd on it, cut a Drain through it about two Feet deep, as narrow as a Man's Wriſt at bottom, but wide at top, with a Shelf on each of its Sides; this he fill'd up with Buſhes, Pea-ſtraw, and Mould; and then gave the Whole only one Ploughing, and harrowed in Wheat-ſeed; and, by the beſt Account I could learn of his Succeſs, he had Fifty-five Buſhels of Wheat, in Return, from each Acre. This improved Field I am ready to ſhew to any Gentleman that thinks fit to have me wait on him to it: And it is in this Part of our County, where the beſt Workmen in *England*, for draining Lands, are thought to live; for from hence they are ſent for to Places at a great Diſtance: And, if any

any Perſon has occaſion for theſe Workmen, on timely Notice, I can help him to them.

How they drain plow'd Lands in Hertfordſhire.—There is a Part of *Hertfordſhire*, that lies very low and wet; inſomuch that their plow'd Grounds are hardly worth half a Crown an Acre, and ſome of their wet Meadow but little more. This put them upon an Invention to better their Caſe: And one of their Gentlemen, of a good Eſtate, having made great Improvements, by cutting Drains in ſuch Grounds, his Example is now followed by others. In my former Works, I have publiſhed ſomething of this; but now I will be more particular: Here, they take a Wheel or Foot-plough, and make as deep a Furrow as they can with it, which ſaves ſome Charge of digging with the Spade; then the common Spade muſt be employ'd in digging down one Spit-deep; and, with another narrow Spade, they dig down another Spit-deep: Next, they make uſe of an iron Scoop, about three Inches broad, to take out the Bottom-Earth; ſo that the whole Depth of the Drain, or Trench, will be about two Feet and a half, or hardly ſo much, as the Situation of the Ground will admit of. When this is done, they take Blackthorn buſhes; and, though ſome of them are as thick as a Man's Wriſt, they'll tuck them into the Bottom of the Drain, as light as poſſible, to tie about a Foot thick. On this they lay Wheat or Pea-ſtraw (but the latter is beſt) to the Thickneſs of three or four Inches; then they fill all up with Mould, and plow over it: This will laſt twenty Years good; but Wheat-ſtraw not ſo long. In this Sort of Work, they are forced, ſometimes, to cut ſeveral Drains; ſome ſhort, ſome long, and ſometimes acroſs, to run the Waters into the main Drain, all in a ſloping Poſture, for carrying them off into ſome Pond, or Ditch, in their own Ground; for the Waters muſt not run into a

Neighbour's, without Permiſſion; though it ſometimes happens, that a Neighbour's Ground becomes accidentally drained, by thus making Cuts in another's. They generally begin to do this Work in *April*, and continue it all the Summer; but their Meadow-ground, ſooner or later, as Conveniency ſerves; if the laſt, the Difference is only in laying down the Turf at Top, and the Mould employ'd ſomewhere elſe.

How a Gentleman in Buckinghamſhire *improved a low wet Meadow-ground, by draining it.*——The Ground, that I am here writing of, is the ſame where the Ant-hills were plowed up, and let lie in Heaps to rot; and, after they were ſufficiently rotted, the ſame was carried about, and ſpread over the Meadow: After this, they dug Drains; and the Earth, that came out of them, was likewiſe ſpread over ſome part of the Meadow; all which ſerved to thicken the Ground, as well as dreſs it; for here the Springs lie very high, which made the Roots of the Graſs the more liable to be chill'd by the Waters of thoſe Springs, and the Ground more ſubject to breed Moſs and Weeds. This proved to be an excellent Piece of Service to the whole Meadow. And, to complete the Work in the greateſt Perfection, they cut ſeveral Drains in the ſame, three Feet deep, ſix Inches wide at Bottom, and three Feet wide at Top, leaving a Shelf of Earth about the Middle of each Side of a Drain. When this was done, as the Gentleman always kept a large Pack of Hounds, the Bones of Horſes Heads, that were killed for them, they put, with others, into theſe Drains, and Buſhes upon them, then Mould, and, laſt of all, Turf; ſo that the whole incloſed Meadow, in one Year's time, appeared a fine Graſs-ground, that yielded the beſt of Graſs; becauſe it never was flooded afterwards, as it was formerly, when, by Inundations of Waters,

ters, this Place uſed to lie covered by them, in long and very rainy Seaſons; for the Waters were, by theſe Drains, all carried preſently off into a ſmall River, that ran not a great way off it. Nor could the Springs annoy this Ground as heretofore, by reaſon the Swell of their Waters was likewiſe drain'd off as the Rain-waters are; ſo that now the Meadow ſeems to lie as dry as an Upland-meadow does; and may be ſaid to be as rich Ground as moſt are in *England*, for fatting Oxen and Sheep; and ſome are, every Year, fatted accordingly: For this Meadow contains about an hundred, or more, Acres, lying within four Miles of my Houſe; and which I am ready to ſhew any curious Gentleman, that has a mind to be ſatisfy'd of this great Improvement by ocular Demonſtration.

How a Gentleman improved his Meadow-grounds, by turning the Water of a Rivulet into another Courſe. ——This Piece of Huſbandry ought to be made uſe of, where-ever Ability and Conveniency will admit of, as being the cheapeſt and moſt profitable Way of obtaining the greateſt Crops of Graſs in the drieſt Seaſons. About the Year 1737, a Gentleman undertook to water, and otherwiſe improve, two of his Meadow-fields, by means of a Rivulet that ran through his Ground: And, in order to do this effectually, he built a Sluice of five Feet wide, at the Head of theſe two; and made Ditches, one on each of them: By which, on ſtopping all the Water at the Sluice, he diverted the natural Courſe of it, that uſed to run through the Middle of the Meadows, and made it run conſtantly into the two Side-ditches; and, when he thought fit to water his Ground, he open'd the Sluice; and thus water'd a hungry gravelly Graſs-ſoil. The Dimenſions of the Ditches were, in ſome Places, four Feet wide at Top, one at Bottom, and four Feet and an half deep: In other Places, according as the Situation

of the Ground would admit of. I know there have been ſeveral Inventions, for this Purpoſe, of watering Meadows; as the *Perſian* Wheel, the horizontal Windmil, the Wheel of Buckets fixed to Chains, the Perpetual Screw, *&c.* But theſe are ſo chargeable, on account of their making, and looking after, that, unleſs there be a very great Neceſſity, and a great Conveniency for it, none will uſe them; whereas this Way not only ſerves for watering Meadows, but, at the ſame time, proves the beſt of Fences to the contiguous Grounds, as well as theſe: And, after the Ditches are once made, with cleaning them, they'll laſt for ever. And thus, by watering theſe Grounds (eſpecially when Waters are thick), there will remain a fat Soil behind, compoſed of the Sediments of the Waters, which, in time, will produce the richeſt of the Graſs. For this Purpoſe, ſome allow Overflowings to be beſt done in Winter; others, not till *March*; and then, only for three Days together, at moſt, at a time; for, if the Water lies too long, it will cauſe the Graſs to turn yellow, and rot; or, if Cattle go in, before the Ground is dry, they will do Damage. On this Account, ſome are ſo careful, as to flow their Meadows in the Night, that they may dry the ſooner in the Day; and, in this manner, will water them once a Week or Fortnight, in hot parching Seaſons. Another Benefit ariſing from making ſuch Ditches, and diverting of Waters, is, that the Earth that comes out of them may be employ'd in filling up the Parts where the Water formerly ran, and levelling the reſt of the Ground, ſo as to make it lie in an even Poſture, the better for lodging the Waters in a due Proportion. But I ſhould have ſaid, that the Earth that came out of the Ditches, and the Parings of the high Parts of the Ground, that were laid to make all level, was plowed; and the Fields were ſowed the firſt

Year

Year with Horſe-beans, the next with Wheat, and the next with Oats, Raygraſs, and Clover: After this, it lay, to become a natural Sward: And, to ſupply theſe Meadows with Water, for Cattle to drink at, a Pond, or Ponds, may be made to be fed by the Running-waters of the Ditches, if the Springs are not ſufficient for that Purpoſe. This is the moſt profitable Way, of all others, for improving low Meadow-grounds; even ſo profitable, that, by ſuch means, a poor Soil is converted into a rich one, and the Owner made to enjoy the biggeſt of Crops of Graſs, when his Neighbours Upland-meadows are parched up by the ſcorching Sun, that ſometimes wholly deprives them of this Advantage.

CHAP. IV.

Of Boggy and Moory Grounds.

AS this is the principal Time of Year for curing boggy and moory Grounds, by ſubterraneous Cuts and Drains, *&c.* I ſhall here employ my Pen in writing on the ſame; and give an Account, firſt, of

Mr. Blyth's *Opinion, what is the firſt Occaſion of Bogs.*——Where-ever (ſays he) is a Bog, I am confident was formerly a Spring; which Spring, running and venting itſelf, kept the Land round about it ſound and dry, as where moſt clear Springs are at this Day: But the ſaid Spring ſtopping up, either with Leaves, or Cattle's feeding, or Wood falling upon the ſame, or other Filth (for, I believe, many, or moſt Parts of this Land were very woody in former Ages), the Spring was ſtopped, that it could not clearly vent; and ſo, being a living Water, would not be ſuppreſſed, or buried, but

but ſwells and boils up into Bogginess; and ſo vents itſelf, by little and little, in a greater Compaſs of Land, becauſe it cannot break forth clear together in a leſſer, becauſe of the Preſſure and Weight of the Earth upon it: And this is the moſt natural Cauſe thereof that I can gather; and my Reaſon is this: In many Bogs (I will not ſay in all) I have found great Pieces, or Boughs, or Bodies of Trees, lying in the Bottom of the Bog, four or five Feet deep, in the full Proportion of a Tree or Bough, as it fell in; but, when you come to take it up, you may cut it with your Spade, juſt as you do your Earth, and it goes to Earth: But how this ſhould come ſo low, and lie ſo deep, and ſo familiarly, in Lands of this Nature, and not as frequently upon ſound Lands, I cannot conceive. But, of Bogs, I ſhall be more particular in the following Account.

The Copy of a Letter from a Gentleman to the Dublin *Society, ſhewing how Bogs may be improved into Plantations of Hops.*——— Gentlemen, few are ſo far Strangers in this Matter, as not to know, that, among the ſeveral kinds of Bogs, the red are deſervedly eſteemed the worſt. Black Bogs yield ſome kind of Paſture, of a finer or coarſer Graſs, according to the Nature of the Bog: They are, beſides, more eaſily reclaimable; and if the upper Surface be ſkimmed off, and the Sods burnt, they afford their own Manure, a large Quantity of red heavy Aſhes, ſtrongly impregnated with Salts; whereas the red Bog has none of theſe good Qualities. It has a ſpongy, light, fungous, variegated Surface; bears no Graſs; and, when you come to burn it, yields but very little Aſhes; and even thoſe, white, fleaky, light, and inſipid. This is ſo well known, that theſe Bogs are never charged with Rent, but thrown into the Survey of Farms, as unprofitable Lands. I have indeed reclaimed ſome of this Kind of Bog in a different Manner,

and for other Purpoſes, than for Hops; and therefore cannot join in calling them unprofitable: But, ſince they are generally ſo eſteemed, and, accordingly, neglected; it will be of equal Service to my Country, to promote the Culture of them under Hops, as if they were really ſo.

As one Letter cannot contain all I have to ſay upon this Subject, you'll give me Leave, Gentlemen, to confine myſelf in this to the Manner of laying out the Ground, and to reſerve the Planting of the Hops for the Subject of a ſecond. Should I croud the Whole into the Compaſs of one Paper, my Directions could not be particular, as they muſt be in Eſſays of this Kind, to be uſeful to the Farmer. There are, in the Execution of any new Improvement, many little Circumſtances, which alleviate the Labour, and leſſen the Expence; and, though they may appear trifling upon Paper, they are, however, of conſiderable Importance in Practice. Theſe I ſhall take Leave to obſerve, as I go on; being leſs concern'd for Elegance and Neatneſs, in a Performance of this Kind, than for the Eaſe and Advantage of the Huſbandman.

Round the Spot intended for your Hop-plantation, dig a Trench ſeven or eight Feet wide, to drain off the Water; give it all the Depth the Fall of your Bog will bear; and, if you cut it into the Gravel, it is the better: Make your Trenches ſtrait, and every-where of an equal Breadth: To that end, lay them out, and mark them by a Line: The Score, or Mark, is made in Uplands with the Spade; but, in Bogs, a Hay-knife is much better. One Man will cut faſter with this Inſtrument, than five in the common Way.

When that is done, take off the firſt, or upper, Sods of your intended Trench with the Spade; but beware of cutting your Sods too large; they are then inconvenient for Carriage, and increaſe the

Labour

Labour of removing them. Make them of that Size, that they may be eaſily turned up, and thrown with Pitchforks on a Wheelbarrow; you may then, at a ſmall Expence, convey them where they may be uſeful. The proper Uſe of them is to fill the adjacent Bog-holes, and level the uneven Places of your Bog. However, it will be neceſſary to reſerve a few of them, for facing your Ditch in the ſame Way as you do Upland-ditches.

When the firſt Sod is pared off, proceed to dig your Trench with Slanes; the Soil thrown up will be as good Turf as any other, and defray the Expence of Trenching: And this I deſire may be underſtood as a general Direction, and applied whereever a Trench, or Hole, of any Size, is to be cut out in a Bog. By this Means, the Charge of Digging is made up to the Farmer in good Turf, and the Labour pays itſelf.

In cutting your Trench, be careful to leave a Gun on each Side of your Plot: This is a Piece of Bog uncut, deſign'd as a Paſſage in and out, with a Chanel for the Water bored in it; it muſt be nine or ten Feet wide, and the arched Chanel under it of ſufficient Height and Breadth to let the Water through. In ſhort, a Gun is a natural Bridge, and muſt have the ſame Qualities, Strength in the Arch to afford a ſafe Paſſage over, and Wideneſs equal to the Diſcharge of Water. Two Men with Spades, or Shovels, thruſting from each Side till their Tools meet, will make one in a little time.

There is another Circumſtance to be obſerved in the making of your Trench: At the loweſt Part of it, where the Water is diſcharged, leave a Bank of two Feet high uncut, to keep it to that Height in the whole ſurrounding Drain. By this means, you have a Reſervoir at hand, for the Uſe of your Hop-plantation; which, whenever a dry Summer happens, will require to be well watered; and, beſides,

ſides, a ready and cheap Manure from the Sludge, or Mud, which will lodge at the Bottom of your Trench, when the Current is check'd by this little Bank. Some, indeed, may fear, that the incloſed Ground may ſuffer by this Method, and be kept too moiſt by the Water about it: But this, I am by long Experience ſatisfy'd, is a groundleſs Apprehenſion. The flowing Water, with a fair Vent before it, has little lateral Preſſure; but directs its Way where it has the moſt free Paſſage. I have made large Drains in a Bog, and kept them full of Water, within a Foot of the Brim, and found no Inconveniencies attending it.

When your ſurrounding Trench is finiſhed at four Feet Diſtance from the inner Edge of it, and exactly parallel, draw another inſide Trench of two Feet wide, and two Feet deep; let it be drawn, like the former, round the Ground, and by the Line; then fill it up with proper Soil, and plant Sallies in it, or any other Aquatics, fit for Poles: They will thrive here exceedingly; and, with proper Care, in ſix Years time, be ready for the Uſe of the Hop-plantation. The Earth about them is kept moiſt by the Bog about it, and their Roots preſerved from Froſts and Winds, by the Diſtance of their Stand from the Edge of the main Drain; and therefore nothing can prevent their Growth. To forward them as much as poſſible, two Cautions ſhould be uſed: The firſt is, to ſtrip off the Side-ſhoots, when tender, to prevent their running into ſtrong Branches, which impair the Body of the Tree: The ſecond, to throw up the Mud out of your Trench upon their Roots; and that way to ſupply them with freſh Nouriſhment. This ſhould be done, when your Sallies are two Years old; at that time, and in the Heat of Summer, cut the little Bank which keeps up the Water in your Trench, and leave the Drain intirely dry; the

Mud at bottom will grow ſtiff, and be eaſily thrown up, and your Trees manured with very little Charge.

A ſecond Letter, ſhewing how to raiſe Hops in Bogs. ——When you have prepared and incloſed your Bog, in the manner deſcribed in my former Letter, at fifteen or twenty Feet Diſtance from the Sally-trench, ſtretch a Line parallel to any one Side of your Incloſure. To this Line tie Rags, or Feathers, nine Feet aſunder from each other; and when your Line is ſtretched upon the Ground, at every Mark, or Feather, drive a ſharp Stick into the Bog, to determine the Centre of your Hop-hills. Having finiſhed your firſt Row, remove your Line to nine Feet Diſtance, and mark out a ſecond; from that proceed to a third Row; and ſo on, till you have finiſhed the whole Plot. The Ground being thus ſet out, and the Centres of your Hop-hills regularly diſpoſed, at nine Feet Diſtance from each other, your firſt Work will be, to dig a Hole at every Centre, three Feet wide, and three Feet deep; to lay the upper Sods of it in the Hollows of your Bog, and to make Turf of the remaining Soil. If you proceed in your Work that Summer, your Turf muſt be wheeled off directly, ſpread and made upon other Ground; otherwiſe it would prevent the Paſſage of the Tumbrils (Carts), which you have Occaſion for in your next Buſineſs. This is to fill your Holes with proper Earths, or Compoſts, in order to receive the Hop-ſets, which are to be planted here, and afterwards managed in the ſame Method as in other Places. To do this, it is obvious, that much Earth will be wanted in a Plantation of any conſiderable Size; and how to provide himſelf with a ſufficient Quantity, at a cheap Rate, is of great Importance to a Farmer. My Method is as follows: In the Upland, neareſt

the

the Bog, I take off the Sward of a ſmall Plot with the Hoe, or Winged-plough; I burn it, and, by thorough plowing, mix the Aſhes with the Mould. To theſe I add a little Lime, rotten Dung, or rich Garden-mould, and throw the Whole together into Heaps, where it heats and rots, and, in a little time, affords the richeſt Compoſt, and the beſt Soil for Hops. I have made artificial Earths in this Manner, not only for the preſent Purpoſe, but in other Improvements alſo; and found it, upon Trial, a great deal leſs expenſive than it appears at the firſt View. The Carriage of them to the Bog is the heavieſt Article in the Expence; and this alſo is much alleviated by the Breadth of the Alleys, and the Method of planting the Hops in Holes. As the tough Surface of your Bog is no-where broken, but in the very Spots where the Hops are planted, it affords a ſafe Paſſage for your Cattle; and as your Walks are ſix Feet wide, the Hills being but three Feet over, and the Centres nine Feet diſtant, you may make uſe of Cars and Tumbrils, a cheap and commodious Carriage.

I own, that, notwithſtanding theſe Precautions, this Improvement is expenſive; but raiſing Hops, in any Ground, is ſo; and, I am ſure, greater in the moſt favourable upland Situation, than in a Bog. A little Arithmetic will ſhew, that Ditching and Incloſing, which, in a Bog, is no Expence; the Turf, made at the ſame time, being equal to the Charge; that Ploughing, Harrowing, Fallowing, and Digging, which, in my Method, are intirely ſaved, with the additional Articles of dunging, hoeing, and paring the Alleys in Uplands, are more than an Equivalent for all the Labour and Expence attendant on Bog-hops; and, from fifteen Years Experience, I can venture to affirm, that the Produce from the latter is as great in Quantity, and in Quality as good. Many Reaſons might be given,

why it ſhould be ſo; ſome of them I beg Leave to lay before your Readers: They may be neceſſary to remove the Prejudices which generally attend new Projects; and to make this new Improvement as common in this Kingdom, as, I am ſure, it will be beneficial, whenever it becomes ſo.

Were it peculiar to my Method, I ſhould reckon the firſt Advantage of it, that the Hills ſtand at nine Feet Diſtance; but, as this may be imitated in Uplands, I ſhall only ſay in general, that nothing is more prejudicial to Hops than cloſe Planting.

The Care taken in Uplands to hoe and pare the Alleys, ſufficiently ſhews, that it is eſteemed a Diſadvantage to have any Quantity of Graſs growing among Hops: Red Bogs are, by their Nature, free from this Inconvenience; and, at leaſt for many Years, till the Surface is intirely altered, throw up none, or very little. How far Planters are right in their Opinion, that a Coat of Graſs impairs the Action of the Sun upon the Fruit, I ſhall not here examine; but, while that Opinion holds, it will ever be a Reaſon in favour of Red Bogs.

Watering of Hop-grounds in dry Seaſons, tho', from the great Expence attending it, too frequently neglected, is certainly of great Benefit to the Crop. This may be done in Bogs, with great Conveniency, and little Charge. The ſurrounding Drain is a conſtant Reſervoir where the Planter may be readily ſupplied; and whoever underſtands the Culture and the Growth of Hops, will reckon this no ſmall Encouragement.

'Tis agreed, among Hop-planters, that low Grounds have great Advantages; they are little expoſed to Droughts, and ſheltered, by the Situation, from deſtructive Storms. Bogs enjoy thoſe in common with the reſt, beſides, as long Experience has informed me, ſome peculiar to themſelves: They do not ſuffer ſo much as other

Flats

Flats by the Rains of a wet Seaſon, or the Mildews of a dry one. Whether their Sponginess afford a Paſſage to the Waters which lodge in other Grounds, and their conſtant Moiſture prevents the bad Effects of too much Heat, I ſhall not now examine: But the Fact i ſelf is certain: They are free from the Inconveniencies above-mentioned; and, what is more remarkable, from thoſe Swarms of Inſects which too often infeſt upland Hops.

I muſt add, that in this kind of Planting, the top Roots have Liberty to ſhoot as far as Nature deſigned they ſhould: They have three Feet of the richeſt Soil to go through, before they run into the Bog; and even there, when once it is well drained, they will meet with better Juices than in a cold ſtiff Clay, or a ſharp ſour Gravel, which are the common Upland Bottoms.

I ſhall conclude by obviating a Doubt, which, perhaps, might occur to ſome of your Readers. Poles will ſtand in theſe Bogs as firm as in Upland Ground. The Earth laid into the Holes, preſſed together, and confined by the tough ſtringy Subſtance of the Bog, will ſufficiently ſupport them, and they need be ſunk no deeper than Improvers direct in other Hop-plantations.

To this Letter were added the following Obſervations.

Obſervations on the foregoing Letters.——We cannot diſmiſs the Reader, without obſerving to him, that it were to be wiſhed many Gentlemen would employ their leiſure Hours in the Country in the way of our ingenious Correſpondent, in making Experiments, and attempting new Improvements. That in which he has ſucceeded, was certainly as unpromiſing as any other; and affords Encouragement to explore (ſearching out) more of thoſe untrodden Paths, which we find lead

to

to private Profit, and public Wealth. Black Bogs promiſe better than the Red; and ſince theſe turn to ſo good Account, why ſhould we not try the other? Or, if we are unwilling to run Hazards, let us at leaſt improve, where we do it with more Safety. We do not want good Land to employ our Induſtry upon; and if ſo much can be made out of the worſt, what may not be expected from the beſt?

CHAP. V.

Of Ploughs proper for Bog-land.

THE Copies of the two following Letters were partly the Occaſion of my inſerting the two former ones ſent to the *Dublin* Society, becauſe they relate to Bogs, and that in a momentous Manner. For though a Bog may be drained to the Purpoſe, and be thereby fitted for being improved with Grain, or Hops, or artificial Graſſes, or Plantations of Trees, or Woods, *&c.* yet, that ſuch Land may anſwer this great End, it is perfectly neceſſary for their Owners to be Maſters of thoſe Ploughs, and other Inſtruments of Huſbandry, that are agreeable to the Soil of ſuch Bogs: And herein the *Iriſh* Gentleman, that deſires my Advice in this reſpect, ſhews himſelf to be a Perſon of a right Genius, as being ſenſible of the great Importance a right Tool is, for diſcharging the Culture of ſuch Land in the cheapeſt, eaſieſt, and trueſt Way; and for his Opinion, that if there be any Ploughs good for that Purpoſe, they are to be had in *England*, where the beſt of Huſbandry is now in Practice. And here I take the Liberty to obſerve, I have heard, at my Bookſeller's Shop, that ſome have left their Reflections behind

behind them there, ſaying, It is their Opinion, I compoſe theſe Copies, for adapting their Contents to the Subject I write of. But if theſe Opiniators would but rightly conſider the Style the ſeveral Letters are wrote in, they might perceive they are not done by my Pen. But to put this out of all Queſtion, I am ready to ſatisfy any Perſon of this Truth, who will come to my Houſe, and ſee the Originals.

The Copy of a Letter ſent to the Author, for a proper Plough to plow Bog lands.

SIR, *June* 19. 1744.

THE public Spirit that ſeems to run through all your Books of Huſbandry which I have read, and much eſteem, gives me Encouragement to write to you, for your Advice and Directions how to get and manage one of your Ploughs, ſuch an one as may be proper for the plowing up ſome *Iriſh* Bog lately drained, and made dry and firm, ſufficient for Beaſts to travel on. I believe it is needleſs to mention to you, who know the Nature of all Kinds of Earth, that this Bog is, in all Appearance (after the Surface, which produces Heath, mixed with a ſour ill-taſted Herbage), like the black Earth which is burnt at *Newbury*, but far inferior in all its Qualities to it: Therefore ſhall deſire you to let me know what the proper Plough is for ſuch ſort of Soil; the Price of it, with the Charge of getting it on Ship-board, in order to be ſent to *Dublin*; and the Place where in *London*, as well as Time when, you would be paid for it. I ſhall beg the Favour of your Anſwer ſoon, which will oblige, Sir,

Your very humble Servant.

Pleaſe to direct for me
at——near——
Wilts.

The

The Copy of a ſecond Letter from the ſame Gentleman, concerning a Plough to plow Bog-lands, *&c.*

SIR, *June* 30. 1744.

I Received your obliging Letter by the laſt Poſt, and only write to you now to acknowlege that Favour; for as you mention ſome particular Sorts of Wheat and Barley, I thought it proper to acquaint my Friend of it, that if he ſhould be minded to have any, they and the Plough, *&c.* might be ſent together. It will be near thirty Days before I can hear from my Friend, ſhould the Packets go and come regularly: As ſoon as I hear, I ſhall acquaint you of it; and I ſhall have, in the mean time, a particular Pleaſure in publiſhing your Schemes of Improvement, ſo rationally laid down by you.

I am, Sir, *&c.*

To Mr. *Wm. Ellis*, at *Little Gaddeſden*, near *Hemſtead* in *Hertfordſhire*.
Franked by, &c.

The Author's Anſwer to this laſt Letter.

SIR, *Little Gaddeſden, July* 5. 1744.

YOURS of the 30th of *June* is with me; and finding, by your Letter, that you are to wait your Friend's Orders before the Plough is to be made, I ſend this to acquaint you of a further Improvement. I find, by one of my Journal-Books that I made uſe of in my late Travels, an Account of a very excellent Sort of Plough, that, worked in Marſh-lands, and according to the Make of it which I ſee, I am fully convinced it will anſwer in Bog-grounds, rather better than that

I lately wrote to you of, becauſe it is a ſtronger Plough, and will go deeper than that; not but that the firſt-mentioned is very proper for a Bog that is thoroughly drained and dried. This Plough will coſt fifty Shillings, which is more than double the Price of the former: Therefore, if your Friend is a nice Perſon, and will not grudge, as it were, a Half-penyworth of Tar to ſave a Sheep, he will have both theſe Ploughs ſent him; for, I aſſure you, they are both the beſt Sort in *England*, and, perhaps, in the whole World, for this Uſe. The Benefit of what I here adviſe may be of vaſt Importance, becauſe, upon ſuch two right Inſtruments may depend infinite Profit: For I am ſure, for want of ſuch, and many more that I could name, there are many Thouſands of Acres miſemployed, by producing barren Crops of Grain, Graſs, *&c.* I know, likewiſe, of a very valuable Sort of Plough, made exquiſitely well to cut Drains through wet Vale-lands in a little time, with a few Horſes.——I have lately received a Letter from *Virginia*, to ſend over our *Hertfordſhire* Double-plough, as I have done before a Drill-plough and Horſe-break to the ſame Gentleman, with ſeveral ſorts of Seeds; and, indeed, if Thouſands were more ſenſible of their own Intereſt, they would grudge Plough-money the leaſt of any, for the ſake of the many Advantages attending the Uſes of theſe ſuperlative Inſtruments; and the ſame for the three Sorts of the fineſt Wheats, which I mentioned to you in my laſt, which I know would be perfect Novelties, if ſeen in *Ireland*; for, indeed, they are ſo at this time in moſt Parts of *England*, as well as the Barley I told you would be the propereſt Sort of all others to ſow in boggy Ground.

CHAP. VI.

Of discovering Springs of Water.

HOW Springs of Water are discovered, in the cheapest Manner, by the Iron Borer.——This very valuable Tool was but a few Years since invented, to save the Charge of Mens Labour and Time, that were formerly employed, at an extravagant Rate, by digging deeply into the Earth for finding out Springs of Water, in order to become Wells. And as this Work was generally carried on by guess, in a very uncertain Manner, it brought People many times under very great Expences to no Purpose, when the Diggers missed of Water. Now this excellent Instrument answers the Design, with much more Certainty, Ease, and Cheapness: For, when it does not in a little time discover Water in one Place, it is tried in another; and not only for searching out Springs of Water, but is also made use of, in the same Manner, for finding Coal, Iron, Copper, Lead, Marl, Stone, and other Minerals, in order to make Pits, Quarries, *&c.* in the Place where the Borer gives the greatest Encouragement. For this Purpose, they begin with making a wide Hole, sufficient for two or three Men to stand and work in, about two Feet deep: Here they enter the Ground with a Borer, or great Augre, or what may be called a Wimble of Iron, whose Bit-part is twelve Inches long and six wide. The other Joints of Iron, as well as the first, are near two Inches square in Thickness, and about ten Feet long, as that likewise is. To begin the Work, they make a large Hole in the Ground, about two Feet deep, for two or three Men to stand in ready to work, by turning the Borer with a large wooden Handle for piercing into the Earth; and, as the Bit fills, they draw it

up

up to empty the Mould, and then directly enter it again. When the Borer is got up to almoſt its Head, they faſten a jointed Iron to it by wooden Wedges, and proceed to turn the Borer again, and empty it as the Bit fills, and ſo on; they add more jointed Irons, as the Depth of the Ground requires, till they get down forty or more Feet into it. Thus two or three Men will bore down twenty Feet in one Day; and from time to time have the Satisfaction of ſeeing the different Stratums of Earth that the Borer meets with, till it arrives either at a Rock, or Spring of Water: An Operation ſomewhat like that performed by Pump-makers, with this Difference, that the laſt carry on their Work by horizontal Boring, and the firſt by downright Boring in a very free and eaſy Way, where the Tool does not meet with Stones, or other hard Subſtances. In ſome Parts of *Bedford-ſhire* their Rule is, if the Borer, after boring through their Clay, meets with a Rock of Stone, they do not fear coming at Water; and then accordingly dig down, for getting to and breaking the Rock to come at the Spring. When Water is thus found, they proceed to ſtain Part of the Well with Brick and Stone, and finiſh it for their great Conveniencies. Others bore in high Ground for finding a Spring of Water; and if they find it, in ſome Places the Water will follow the laſt Boring to the Top of the Earth, and become a conſtant Supply of Water inſtead of a Well, and by which the Water may be conveyed, by a Cut in the Ground, or by wooden or leaden Pipes or Gutters, to a lower Situation, and thus become a very great Advantage for a trifle of Expence; and the leſs, where ſeveral join in purchaſing this ſerviceable Inſtrument.

CHAP. VII.

Of making Vaults, Cellars, and Rooms, in ſpringy and dry Grounds.

HOW a Vault, or Cellar, was propoſed to be made in a ſpringy Ground, at a great Charge; and how it was ſupplied at a ſmall Expence, for the Conveniency of a Dairy.——A large Farm, in the Vale of *Alesbury*, rented at one hundred and ſixty-five Pounds a Year, where the Tenant kept, on the grazing Part of it, about twenty Cows, had not a Cellar, nor convenient Room, belonging to it, for carrying on a Dairy in a right Manner: Upon which he ſolicited his Landlord to be at the Charge of one; but his uſual Anſwer was, that the Springs were ſo high, that a Cellar could not be well made. The Tenant then acquainting an ingenious Bricklayer with his Landlord's Objection, ſaid, if he would allow him Terrace enough, he would engage to build him a Vault that the Water ſhould not enter, and make it a moſt convenient Place for his Milk and Butter: But the Charge of this amounting to a higher Sum than the Landlord would allow of, the Propoſal was rejected. At laſt, the Tenant perſuaded the Landlord to allow him but forty Shillings, and he would undertake to have a commodious Room made for his Purpoſe. This being granted, a Bricklayer was employ'd, who ſunk an old Room about ſixteen Feet ſquare, lying on the North Side of the great Dwelling-houſe, about three Feet deeper than it was; and, cutting a Drain from the ſame into a Pond that lay three Poles Diſtance from it, the Spring-waters never offended this Dairy-room afterwards: Whereas, the Brick-floor of this Room ſtanding, before, almoſt even with the Surface of the Earth, and the Room incloſed by

by only a Half-brick thick Wall, built in Frames or Studs of Wood, the Sun had ſuch Power here, as to cauſe the Milk to turn ſour, if they kept it the uſual Time, as is done in proper Rooms or Cellars; which greatly damaged the Tenant, by bringing him ſometimes under conſiderable Loſſes: And this the more, as he was obliged to make up and deliver his Butter but once a Week to the *London* Higgler; with whom he agreed at the certain Price of Six-pence *per* Pound, Summer and Winter, for all he made. Thus this Tenant, with a little Money from his Landlord, and a little out of his own Pocket, enjoy'd a Dairy-room, that proved as commodious as ſome Cellars. But, by-the-by, this Tenant ought not to have been at any Charge on this Account; for ſuch an Expence belongs wholly to the Landlord: And it is very reaſonable it ſhould be ſo; ſince all Tenants, I believe, find it Taſk enough to pay their Rents, even with the greateſt Conveniencies that are allowed by the beſt of Landlords.

How a Room was made to anſwer the Convenience of a Cellar, for keeping Liquors ſound.——This was done at a Gentleman's Seat in *Bedfordſhire*, where the Ground was ſo ſpringy, that it would not admit of building a Vault or Cellar: Here then they added a new Room to the Outſide of another; and, on the North Part of it, built it up with a Brick-walling three Feet thick, and with as little Light as could be well allowed it: This fully anſwered the Intent, by keeping the Liquors ſound almoſt as well as a Cellar. This Thick-wall Method will likewiſe do, where Rocks of Stone will not admit the Owner to dig a Cellar; as the Caſe is with many in *Somerſet*, *Devonſhire*, and *Cornwall*, where the greateſt Part of their Land conſiſts of ſtony Foundations.

Of making Tanks and Cellars under Ground for holding Water.——Neceſſity invented theſe; otherwiſe there could be no Habitation for many Perſons that now dwell in Houſes, whoſe Foundations are ſo deeply dry, that no Spring-water can be had, nor Pond conveniently made. At that great *Engliſh* Gariſon of *Cape-Coaſt* Caſtle in *Africa*, in their ſandy Lands, the late Governor *Henry Dodſon*, Eſquire, told me, they were forced to make a very large Tank Reſervoir, or Ciſtern, in the Earth, for receiving the Rain-waters that are conveyed into it from the Tops of Houſes, as often as Showers fall. This they build with Brick and Terrace, ſo large, that if they have no Rain for half a Year together, this ſupplies them with Water enough for the Occcaſions of the whole Place. The ſame may be done at home, where Houſes are to be built on mountainous, or other dry Situations, where Water is to be no otherwiſe had: Or a Cellar, to hold Water, may be made with Brick, on a well-ram'd Clay-foundation, if the Sides of the ſame are carried up with Clay ram'd behind the Brick-work, which, if rightly managed, will hold tight; and which is ſomewhat like the Method that the *London* great Brewer takes to ſecure the lower Part of his large ſquare or round wooden Tuns, that ſtand about two Feet deep in the Ground: For which Purpoſe, Men firſt ſpread a thin Bed of Clay on the Earth; and when, with their naked Feet and Water, they have made it pliant, they lay a Bed of it for a Bottom, and the Tun on that; then they ram in, and fill up all the Sides with the ſame temper'd Clay, till all holds as tight as Copper itſelf: Or, take it as Mr. *Worlidge* writes: In *Amſterdam* and *Venice* they keep their Rain-water in Cellars, made on Purpoſe for Ciſterns, capacious enough to contain Water for the whole Year; it being renewed as often as the Rain falls. Why, therefore, may we not here in *England*,

land, on our drieſt Hills, make Places, Pools, or Ciſterns, ſufficient to contain Water enough for our Cattle, for our domeſtic Uſes, and alſo for our Garden-occaſions, if we were but diligent? Few Years there are, but yield us Plenty of Showers to ſupply them, though not enough to ſupply the Defect of them; much more Rain falling here than on the Continent, where thoſe Pools and Ciſterns are more uſed; for which Cauſe this Iſland is, by them, term'd *Matula Cæli*: And yet we have many Thouſands of Acres of dry Lands uninhabited, untilled, and almoſt uſeleſs unto us, from this only Cauſe; notwithſtanding we have ſuch eaſy Means to remedy it.

CHAP. VIII.

Of ſinking Wells, &c.

THE Methods taken, and the Prices given, for ſinking Wells in the Weſtern Part of Hertfordſhire.——Common Wells are made three Feet three Inches wide, and as far deep as thirty or more Yards; for which ſort of Digging the general Price is Six-pence *per* Foot. The Wells in the low Grounds, about *Gaddeſden*, are about that Dimenſion; but in ſome Places of our Hills we dig two or three hundred Feet deep before we come to Water. After two hundred Feet, the Price is one Shilling *per* Foot for digging and drawing up the Earth: If much lower, four or five Shillings *per* Foot; becauſe in ſuch Depths a Man cannot work above one Hour at a time, before the damp Vapour is ready to ſuffocate him; and then a freſh Man takes his Place. If a Well is made in chalky Ground, they ſtain it down only to the chalky Rock, with Pieces of Chalk cut and ſhaped in ſuch

a manner, that one Piece wedges in another, without any Morter; and this happens from five to twenty Feet deep, as the Rock is nearer or further off the Surface of the Earth. Then they lay on this looſe Building of Pieces of Chalk, three or four Courſes of Bricks in Morter; and when this is done, they place over all a round Curb of Wood to hold the Top tight, prevent Waſhings, and give the Carpenter a Baſis for erecting Side-poſts to fix a wooden Roll in, or to draw up the Water by ſome other Invention. In ſinking old Wells deeper, as is ſometimes done in very dry Summers, to clear them of muddy Bottoms, and get a freer Water, the Labourers for this Work have two Shillings and Six-pence a Day, beſides Victuals and ſtrong Drink; but in this Undertaking they are ſeldom above a Day or two employed, unleſs there be more than ordinary Occaſion.———The Atmoſphere, or lower Region of the Air, is ſaid not to allow Water to ariſe in a Pump above thirty-three Feet, or little more. Now that Space, that is between the Water and the Bucket, is Air; and if by lifting up the Handle the Bucket goes down, the Air forces through the Valve of the Bucket, which, ſhutting, keeps it there. This Air makes a Preſſure in the reſt, and that preſſes more Water to the other in the Well; and that having not ſo much Air to keep it down as it had, eaſily riſes up as high as the evacuated Air gives leave; and ſo as more Air is taken out, more Water will follow, till all the Air be gone, and the Water itſelf comes; and then one Water will follow another *ad infinitum*, unleſs the circumjacent Water ceaſes, or the Pump is worked faſter than the Chanels of the Earth will give leave for freſh Water to come in. Theſe Reaſons made Mr. *Haughton* think the Air is bounded, and that the Atmoſphere has Air enough juſt to fill it to a certain degree of Cloſeneſs;

neſs; yet not ſo cloſe, but that it may be compreſs'd cloſer; and ſo much as it is, ſo much there will be a Vacuity in ſome other Place, and ſo much will be a Springyneſs tending towards its former Conſtitution.——At *Otherden* in *Kent*, I am informed, there is a Well ſixty Fathom deep. On the Hills about *Gaddeſden* their chalky Wells are generally about eighty Yards deep. The Water of one of theſe is drawn up by a large wooden Wheel, and two Horſes, kept only for the Purpoſe of working it, one to relieve the other; for here is ſuch a Conſumption of Water as makes it very hard Work for both of them to draw Supply enough. Others keep a large Maſtiff-dog to work a Wheel that draws up their Water; or do it with the wooden cogg'd Hand-wheel, or with an Iron-wheel Engine, for drawing up the Water-bucket with the greater Eaſe.——In ſome Parts of *Somerſet*, *Devonſhire*, and *Cornwall*, to come at Spring-water, they are forced to work through Marble, or other ſtony Rocks; and to make a Well here, are obliged to run the Hazard of a conſiderable Expence; for here the informing Borer will do no Service, and therefore they proceed by working an Iron Tool, that they cut a Hole with, to hold ſuch a ſufficient Quantity of Gunpowder, that when fired, by a Train laid on purpoſe near a Piece of brown Paper and a Bit of lighted Candle, blows up Part of the Rock into Shatters; and ſo they proceed deeper and deeper, till they get down low enough to determine whether there will be Water found or not; for here they ſometimes ſink two or three Wells before they can meet with a Spring; and ſometimes, after all, their Labour is loſt.——A Gentleman's Well, made at firſt in a chalky Rock, that was ſituated on an Eminence, meaſured two hundred and forty Feet from Top to Bottom, which

ſupplied a very large Family with Water, for time out of mind, that was daily drawn up by the Help of a very large Wheel, turned about by a Horſe kept on purpoſe for this very Work. This Well was never known (as I could hear of) to be ſo low in Water as in the Year 1743. when they could not get Water enough to brew with; which induced the Owner to be at the Charge of having it cleanſed, and dug deeper; and it was done accordingly in the Month of *January* 1743; for which Work each Man had four Shillings a Day allowed him, to clean and dig deeper. And, indeed, they well deſerve it; for a Man could not work above four Hours at a time before he muſt be relieved by another; and, to ſupport him under his Work, he is obliged to take a hearty Dram of Brandy now-and-then, but to eat nothing; for if he does, it cauſes him almoſt to loſe his Breath, ſwell, and be ready to die. Here they are always warm, but very cold when they come out of the Well, and therefore are had immediately to a good Fire, where they ſhift their wet Cloaths, and put on dry ones, which is their conſtant Cuſtom; for the Damp or Vapour always wets their Cloaths, and obliges them, when out of the Well, to put on dry ones. By this the Well was dug deeper, till Water flowed in ſo faſt as obliged them to leave off their working any further.——At *Whipſnut-hall* near *Dunſtable-downs*, three Miles diſtant from the aboveſaid Well, there is one rather deeper than three hundred Feet, where the Water is drawn up by a Wheel and Dog.

CHAP.

CHAP. IX.

Of making Ponds.

THE way we take to make Ponds at and about Gaddeſden.——On our Hills, and in ſome of the adjacent Bottoms, they have no Water but what Ponds afford; and theſe, in ſome dry Summers, are all dry, except two great ones on our Hill, and ſometimes (but rarely) they are ſo too; for in ſome of our red Clays we now-and-then meet with what we call Sand-pipes, or little Veins of Sand, that lie in the Clay, and let all the Water out. The ſame we are as bad off in our chalky Ground, and the gravelly Sort. To make, then, a Pond in any of theſe Soils, we get the ſtrongeſt Clay we can, cleareſt from Stones; and after digging to a proper Depth for the Pan or Bottom, and making ſufficient Slopes on the Side, and at the Head, we begin to ſpread a Layer of Clay on the Bottom, about half a Foot thick, which, with a little Water to moiſten it, we work with flat Beaters, downright Rammers, and crooked Sticks, till we make it fine, and lie cloſe: Then we put on another Layer of Clay, and ſerve it in the ſame manner, both at Bottom, and on the Sides, till all Parts are a Foot, or a Foot and a half, or two Feet thick. Afterwards we pitch the Bottom with Stones, and ſow Graſs-ſeed on ſome Mould, ſcattered on their Outſide; or, which is better, lay ſome Graſs-turf over all. Thus by laying and ramming ſeveral Courſes of Clay one on another, and ſtoning and turfing, we make ſound Work, and keep the Bottom and Sides from being damaged by the Tread of Cattle, and from chapping by the Sun and Wind, whenever the Pond ſinks low, or is empty: Yet I knew a Gentleman loſe all his La-

bour and Charge in ſuch an Attempt, after the following manner, *viz.*

How a Gentleman had a large Pond made, that never held Water.——This was done about ſix Miles Diſtance from my Houſe, where lived a Gentleman in his new fine-built Houſe, which to make the more convenient, he ſunk a large Pond near it, ram'd it well with Clay and Turf, and paved the Bottom well with Stones. And as ſoon as all was finiſhed, he dug a ſmall Gutter in the Earth from an adjacent Pond on a Common; and then had Men with Jetts to lade out Water, and make it run through this Gutter into the new-made Pond till it was full; but it never held ſound, becauſe the Clay was not good, being of too loamy a Nature. But if the Pond had been worked with a true Clay, yet if ſuch Clay was not rightly work'd, it might let the Water through; or if the Clay was good, and the Workmanſhip ſo too, yet if the Water was ſuffered to be ſo low too ſoon, as to give the Sun and Air an Opportunity to dry and chap the Clay ſo far as to let the Water through; I ſay, the Labour on any of theſe Accounts would be, in a great meaſure, loſt; for that moſt of the Work muſt be done over again, to make ſuch a Pond hold tight: Wherefore, to manage even a well-made Pond right, the Water ſhould, at leaſt, be kept pretty high for ſome time after making, that the Clay may have time to be thoroughly ſettled, and cloſed in all Parts, before the Sun and Air is ſuffered to come at it; though a Slope or B nk, very probably, will leak a little at firſt: But this ſhould prove no Diſcouragement; for, by ſettling of the Earth, it will continually grow tighter, and in a few Years become intirely firm. However, there is, I am apt to believe, a material Matter in Pond-making overlook'd by ſome; and that is, where the Bank or Slope has not a right

Foun-

Foundation, it may ſpoil all the Work; and to have ſuch an one, one Foot or more ſhould be dug below the Bottom of the Pond, to begin making the Bank or Slope of Clay; elſe the Weight of the Water will work itſelf underneath, and render all ineffectual.

How a private Perſon made a Pond for the Uſe of his Houſe.——This Pond was made at *Gaddeſden* in the Year 1740, and ſtands behind a Carpenter's Houſe, at about one Pole Diſtance from it. The Ground it was made in is a red Clay, under a hazel loamy Surface of Earth, fifteen Inches deep: Then the Clay appeared, which though it run down twelve Feet in Depth, before they could come at the chalky Rock, yet the Owner would not dig down above ſeven Feet, nor then rely ſo much on its Cloſeneſs as to venture to truſt to its keeping Water: Therefore the Clay, that came out of the Pond, he had well picked from the Stones, and worked well, by Ramming and Beating, till he laid a ſound Bottom of ſuch work'd Clay fourteen Inches thick, and the Sides or Slopes of the ſame Thickneſs. When he pitch'd the Bottom with Bricks, laid flat-wiſe, and in the ſame Poſture all up and round the Sides, he laid Bricks, to the Number of about nine hundred; for by laying them on their Edges, round the Pond, a few Bricks went a great way. When raiſed thus up to the Top, with Lime and Sand mix'd, that was laid in all the Joints, a Curb, or Piece of thick Wood, were laid round; and a Pump, made to ſtand in the hither Part of the Pond, next the Houſe, whoſe Dimenſion was about five Feet and a half at Bottom, and ten at Top wide, and fed by Spouts, that brought off the Water into it from the Houſe-tiling; and by a wooden Handle, work'd in the Houſe, the Water was brought into the Houſe for their neceſſary Uſes.

How

How a Pond was made to ſwim and cure Shoulder-ſlip'd Horſes.———A Perſon in *Hertfordſhire*, that profeſs'd Surgery, and curing diſtemper'd Horſes, had a Pond made on purpoſe to ſwim Shoulder-ſlip'd Horſes, as believing this to be the beſt way, of all others, to effect their Cure, according (I think) to a Direction in an old Book wrote by *Markham*; and it may, perhaps, do ſome Service to a freſh Shoulder-ſlip. But it is certainly a very uncertain way of Cure, becauſe they truſt to the ſwimming Motion of the Leg and Shoulder to ſtir and diſſolve, or diſperſe, the Jelly or clotted Blood, that the Strain or Slip is the Cauſe of breeding and lodging. But I am of Opinion, that Bleeding in the Plate-vein, anointing with Oils, and a Rowel, with a Patten-ſhoe, is a much more ſure Way for a freſh Slip in a Saddle-horſe; for a Cart-horſe is hardly ever known to come under this Accident. Now, in caſe a Shoulder ſhould be ſlip'd of a Saddle-horſe, or if the Shoulder of a Cart-houſe ſhould happen to be wrench'd, and remain ſo a long time without a Cure, as many have been, then neither of theſe Ways will do; as I ſhall make appear by the two following Caſes, *viz.*

How a large Pond was made at Gaddeſden-hill *by Accident.*———This Pond lies on the Middle of *Gaddeſden green* or *Common*, finely expoſed to a moſt thin ſweet Air, that, by ſome Phyſicians, has been accounted the moſt healthful Air in this Part of *Hertfordſhire*; being highly ſituated, clear of the Cover of all Trees and Buſhes, and of the Filthineſs and Putrefaction of their Leaves. This Pond, about one hundred and twenty Years ago, was a Chalk-dell or Pit, wherein many Swine were uſually kept on Waſh and Grains: Here, alſo, a Dunghil was every Year made: And they were theſe Accidents that, in time, proved very beneficial to the Village

Village of *Gaddeſden*; for, by this very means, the chalky Bottom and Sides of this Dell or Pit became plaiſter'd over, and, as it were, cemented; for, of all Dungs to this Purpoſe, none is ſo ſerviceable as that from Swine; which being trod in by the Feet of theſe Animals from time to time, at laſt this chalky Hole held Water like a Pewter-diſh; and, at this Day, retains more than any other Pond in this Part of the Country; ſo that *Gaddeſden*, and ſome of the adjacent Places, in very long dry Seaſons, are ſupplied with Water from this Pond; which is called by the Name of *Blue-pot*; but for what Reaſon I know not. This Pond, in its greateſt Depth, is about eight Feet, and forty broad, well ſtored with Fiſh, that it breeds and nouriſhes with great Expedition, and ſerves for watering the Cattle of the adjacent Farmers; as alſo for Brewing, for Waſhing, and for culinary Uſes, as being the freſheſt and beſt Water we have. I never knew this Pond dry, but once, in near thirty Years time, and that was near twenty Years ago; when I, as well as others, were forced to ſend our Teams to a River for Water that lies three Miles off my Houſe: Which Account may, perhaps, be ſerviceable to ſome Perſons, that have the like Opportunity to make of a chalky or gravelly Dell-hole or Pit, a conſiderable Pond, in the cheapeſt manner poſſible: For, in this Caſe, the Swine may be ſaid to be the chief Makers of ſuch a Pond: And, from what I have ſeen in my Travels, I am ſure there might have been many Ponds made this way, where there is none at preſent; for in innumerable Places may be ſeen Water to ſtand by the mere Waſhings of Dirt into their Ditches, and other hollow Parts of Sands, Gravels, Chalks, and Loams, where the natural Soil would not alone hold Water: But, by the Mud and Sludge that waſhes into their Baſon-parts, it ſo fills

up,

up, as I ſaid, the porous Surface, as to cauſe a laſting Retention of Water: And from hence many fine Ponds have accidentally had their firſt Riſe, and tempted their Owners to inlarge their Bigneſs into noble Fiſh, and other Reſervoirs of Waters; with this further good Property, which generally attends all ſuch Ponds, that the Mud that they receive from the Fall of Waters may be made to do great Service, either on plowed or Meadow-ground; and the more, if ſuch Mud is rightly mixed with ſmall Chalk, Lime, or Aſhes; and turned once or twice, till the Whole becomes a fine Heap of rich Manure: For it is ſuch a Compoſition that comes neareſt to the true Marl, which makes the *Kentiſh* and *Eſſex* better Sort of Farmers uſe their utmoſt Endeavours every Year to obtain ſuch a Compoſt for their Wheat-land in particular; for this Dreſſing is of ſo ſweet a Nature, as to prevent Smuttineſs. I knew of a large Pond, ſituated on a high Common, and near a Farm-yard, that lies ſo favourable for the Tenant's Purpoſe, that I verily believe the Mud of it is worth ten Shillings a Year to him, by reaſon it is furniſhed, in three or four Years time, with ſuch a Quantity of it, as enables him to dreſs a Three-acre Meadow to a very great Advantage; for into this Pond runs the Drain of two Farm-yards, beſides the falling Waters of a common Road, through which abundance of Sheep paſs every Day from the Folds to this Common all the Summer-ſeaſon; which impregnates this Mud with ſuch a fertile Quality, as produces moſt rich Crops of natural Graſs, without any Addition of Stable-dung, Chalk, Lime, or Aſhes; for this Mud, after it is got out of the Pond, and dried, is carried, and laid on the Graſs-land about *Allhallowtide*, where it is ſpread for the Winter-rains to waſh it in. But, although I here write of laying on this Mud in its raw and undigeſted four Condi-

tion,

tion, it ought not to ſerve for a general Precedent; becauſe the exceſſive Richneſs of this Mud ſupplies that which a poorer Mud requires to make it anſwer a fertile Purpoſe; even the ſaid Mixture of Stable-dung and Chalk, or Lime or Aſhes, to be incorporated with it, in order to add a Strength, a Fineneſs, and a Sweetneſs, to the Body of ſuch poor Mud: And, when it is thus cured, it may become one of the beſt of Manures for either Meadow or Arable-lands. But, beſides the extraordinary Benefit that attends this well-ſituated Pond for the Increaſe of the richeſt Mud, at the ſame time, and by this very means, this Pond is, perhaps, one of the quickeſt of feeding Ponds; for, in three or four Years time after Tench and other Fiſh are put in here, about the Bigneſs of a Sprat, they will grow to ſix Inches in Length, by the End of that Time.

How Trouts may be made to acquire the greateſt Degree of Redneſs, and of the Colour of Eels, and other Fiſh.——Fiſh, undoubtedly, like Beaſts, have their Bodies better or worſe, as the Soil, Water, and Air is good or bad they live in. Theſe are what make Eels in muddy Ponds and Rivers, ſhew yellow Bellies, and eat with a naſty, muddy, loathſome Taſte, when Eels taken out of gravelly or chalky Ponds and Rivers, ſhew white ſilver Bellies, and eat luſcious: Yet, ſo contrary is the Nature of ſome Fiſh to others, that the Tench, in particular, ſeems to eat fatter and more luſcious out of a Farm-yard Pond than out of a clear River; as I have experienced. But the Body of a Trout is well known to acquire the reddeſt and ſweeteſt of Fleſh, when he gets his Living near a chalky Spring-head, where he feeds with great Delight, and runs into a very expeditious Growth.

CHAP. X.

Of Fiſhing in the Sea.

OF Sea-fiſhing by Engines.——Sea-fiſhing is the moſt delightful, profitable, and healthieſt Fiſhing of all others, becauſe here is more Variety, and greater Quantities, of both ſmall and large Fiſh, than what Rivers afford. Variety, I ſay; for that near moſt of the Sea ſhores in *England*, the excellent next beſt Fiſh to a Salmon, called a Mullet, is taken in great Numbers by the Drawing Seine-net, as well as the Standing-net, fixed by Polls on the Sea-ſhore; a Fiſh, that at *Canterbury* ſells for Six-pence *per* Pound; but at *Weymouth* in *Dorſetſhire* the Silver Mullet, as big as a Mackrel, ſells for Two pence. This is that fat delicious Fiſh, that, more than all others, ſwims next the Shore all the Summer long in Shoals: And, I hope, with the Turbut, the Thornback, the Skate, the Freſh Cod, the Haddock, the Baſs, the Sole, the Whiting, the Whiting-pollock, the Scarlet Mullet or Sea Woodcock, the Jan Dorée, the Bream, the Plaice, and others, will be more plenty than heretofore, by means of the new-invented Engines: The Account of which take as follows, as it was printed in the Evening Poſt in *January* 1743-4.

An Account of the new-invented Fiſhing-engine.—Whereas his Majeſty's Royal Letters Patents have paſſed the Great Seal of *Great Britain* to *James Hamilton*, Gentleman, for the ſole making, uſing, and exerciſing a new Engine or Engines for taking of Fiſh, by the Help of which (being fixed upon the Land, and a ſmall Anchor carried out, only once, and) dropt in the Sea at a thouſand Yards, or any leſs Diſtance, from the Land or Shore, almoſt every Sort of Fiſh that happens to ſwim between the Anchor and the Shore, may be taken,

either by Fiſhing-nets of different Sorts, or with Hooks and Lines, for ſeveral Months together, without carrying either or any of them out in Boats into the Sea; this Method of Fiſhing being no ways toilſome or laborious, and requiring the Attendance of two People only upon the Shore; and may be fiſhed with in the moſt ſtormy Weather, and even as well in the Night as in the Day, and at times when Fiſhermen cannot venture out with Safety in their Boats: This Invention, having been fully proved on ſeveral Parts of the Sea-coaſt, with Succeſs, will certainly prove very beneficial to thoſe Gentlemen whoſe Land or Eſtates lie next the Sea, or upon Rivers, or large ſtanding Waters; and will likewiſe give conſtant Employment to the Poor in general in ſuch Parts; and eſpecially thoſe poor People whoſe Habitations are cloſe upon the Sea-ſide, may have the ſingle Engines for Hook-fiſhing fixed within their Houſes, and may ſit by their Fire-ſide, and work them, the ſame as without Doors, a Man or Boy attending on the Shore. Whoever has a mind to buy one or more of the Engines, ſhall have full Proof given them before they pay their Money, the Price being ten Guineas for the double Engine complete, and four for the ſingle; or a Guinea down, and a Guinea a Year for a Licence and Figure, which is to be fixed on each Engine, in order to prevent Counterfeits. But if any Gentleman has a mind to contract with the Patentee and Proprietors for any Number of Engines extraordinary for the Hook-fiſhing alone, they ſhall have the Liberty to make them upon their own Premiſes; and a proper Perſon ſhall be ſent down to ſuch, at their Expence, with an Engine firſt to be ſet up, in order that they may be fully aſſured of its Succeſs, before any are made.

Note, Any poor reduced Family, that has not been inured to hard Labour, if they'll retire and ſettle upon any Part of the Sea-coaſt they think proper, may be aſſured of getting a good Livelihood, by a ſingle Engine alone, without any Fatigue or Labour, only their Attendance.

Letters, Poſt paid, from any Part of *England* or *Wales*, directed for the Patentee, at the *Admiralty* Coffee-houſe near *Whitehall*, *London*, will be punctually anſwered; where the Engines will be diſpoſed of, and at no Place elſe; as alſo a Model of the whole Invention may be ſeen, and Fiſh taken alive in Nets. And at the ſame Place may be had Prints of the Engine, with a full Explanation or Deſcription of the Whole.

The ſingle Engines will anſwer effectually on board of Ships lying at Anchor.

CHAP. XI.

Obſervations on ſeveral Sorts of Inſects.

Obſervations made on Toads, Frogs, Snails, Bugs, Lice, Worms or Maggots, Spiders or Flies, Efts and Leeches, &c. *by the ingenious Mr.* Glandville, *of* Edgware *in the County of* Middleſex, *who communicated them to me in the following Particulars.*

FIRST, *Of the Water and Land-toad.*—From their Coupling to their Spawning, I have obſerved their Spawn on the Bottom of Waters in a Pond, when the Water was drawn out; and it appeared in a Chain, like what they uſed to call Knit-knots, or as black Silk tied in Knots, about the Bigneſs of a Blanket-pin's Head, and half the Diameter, one from the other, with a tranſparent Body, glutinized together. The Length of this Chain

Chain of Eggs or Spawn I have ſeen from one Toad, like a Coil of Line, eighteen or twenty Yards. I have made it my Buſineſs to examine the Places where I ſaw them, and at laſt they grew larger, and burſt the Chain, and the black Specks turned to Tadpoles, very ſmall; and I always obſerved they came to the Shore where the Water was ſhalloweſt, or to the weedy Surface of the Water, for the Benefit of the Sun's Heat. After this, as their Bodies grew in Magnitude, I obſerved them to alter the Colour of their Bellies to a dirty Silver Colour, with ſmall Specks of a darker Colour, and bright Eyes of their proper Colour, and their Mouth round like that of a Leech. They had long Tails like an Eel, with globular Bodies. Theſe I daily examined, by taking them into my Hand; and, at laſt, found, by the Side of their Tail, one of their hind Legs to come out, and then two Legs to grow longer and longer, and then to break at the Breaſt or fore Part of the Body, perhaps two or three Toes on one Side, and then on the other, till in about three Weeks time, or a Month, they came to Perfection: Then the long Tail, like the Eel's, with a Flew on each Edge, being of no more Uſe to them, by reaſon they made uſe of their amphibious Legs to ſwim with, the Tail, in a Week or a Fortnight, rotted off, which I daily obſerved. Then, after Rains, I obſerved they crawled out of the Pond on the Land, and left the watery Element for an earthy one. And, *N. B.* I have ſeen a Water-toad to ride a Carp till he has ſtarved it to Death, or poiſoned him with his Spawn, which covered the Carp; and his Fingers or Toes have been ſo fixed in his Sides, betwixt the Fiſh's Scales, that I could ſcarcely get the Toad off the Carp's Back, when out of the Water.——I have ſeen a dry, or Land-toad, under a large Log of Timber,

Timber, in a round Hole, where I could not ſee any way that it could get into it: And here, I perceived, it was covered in its Spawn, and the Spawn joined together with a ſlimy Thread or Jelly, not like the Water-toad, but like the Spawn of a Lobſter. I have alſo obſerved the Tongues of Toads and Frogs with their Points inverted down their Throats. The Land-toad has a Form ſomewhat like an Hare's, which, in the Evening, it quits, in Queſt of Food. A Bittern was ſhot flying over a Water, with a Toad in its Mouth.

Secondly, *Of the Water and Land-frog.*—I am of Opinion, that the Land and Water Species are alike: Only this I have obſerved, at the time of their coupling in the Water, to be the ſame as Toads; but their Spawn is of another Shape, yet has the ſame black Specks in it; is in Globules, as big as ſmall Currans; and grows in Cluſters, joined together like Grapes, but ſwells larger. The Difference between their Spawn and the Water-toads is, that the Toads lie at the bottom to hatch, and the Frogs Spawn ſwims at top of the Water to hatch; and accordingly they hatch it on the top, that afterwards turns to Tadpoles, the ſame as Toads, with a long Tail, and their Legs come out as aforeſaid, in the ſame manner the Toads do, and their Tail rots off the ſame. At laſt, when they come to a Maturity of Growth, they make to Land, and thus prove themſelves to be of an amphibious Nature.

Thirdly, *Of Water and Land-ſnails.*—I have ſeen two Kinds of theſe in ſtagnate Waters, one much ſmaller than the other; one with a broad-mouthed Shell, coming to a ſpiral Point, conical, very ſwiftly; and the other being very flat, in a ſpiral Line, with ſeveral Rounds. I have often pulled them out of Ponds, among the Weeds. As to their Spawning, or Laying of Eggs, I know not how

to

to account for them in particular; but this I have obſerved in Land-ſnails, when I have ſeen them gender, that they both have Inſtruments of the Male and Female Kind; for I have pulled them aſunder, and pulled the Inſtruments out from each other.—They lay Eggs in the Ground, about the Bigneſs of a large Corking-pin's Head, clear, globular, and tranſparent, joined together with a ſmall Thread of Slime.

Fourthly, *Of Water-bugs.*—I have made Obſervations on Bugs of different Kinds in ſtagnate Waters. There is a ſmall Sort, of the Bigneſs of about half a Pea, which plays on the Surface of Water in Companies, running round each other in a ſwift and uniform Manner, with very ſhining black Backs; they have two Wings, and ſix Legs; the firſt are of a very hard Subſtance, and under them are two ſoft tranſparent Wings. —— Another Bug I have ſeen in ſtagnate Waters, much larger than the other, being about three quarters of an Inch in Length, and near half an Inch Diameter, with ſix Legs; but two of them are much longer and broader than the reſt, like an Oar, notched in their Edges, and have forked Claws, which they ſwim with in a very ſwift Motion. Theſe have alſo two large hard Wings, and two ſoft Wings under them; will frequently come to the top of the Water, I ſuppoſe, for Air; but if you offer to take them, they will run very ſwiftly, in a downright Motion, to the bottom of the Pond, by the Help of their Legs, or Oars as I call them, becauſe they uſe them as ſuch in a very ſwift Manner. I have laid one of theſe on his Back, and found him to be ſo ſtrong as to jump two Inches high.

Fifthly, *Of Water-lice.* —— I have often ſeen theſe, in ſtagnate Waters, ſome as large as a Grain of Wheat, others as ſmall as a large Pin's Head, very

very tranſparent, with ſix Legs, a flat Head, and but one Eye, and that in the Front of their Head, like the Story of *Polypheme.* They are very ſwift in Motion. I have ſeen theſe Sort in a Tub of Rain-water as well as in Ponds, where, as I ſuppoſe, the Water in ſuch a Tub has been kept ſo long as to putrefy, and breed them.

Sixthly, *Of the Water-ſhrimp.*——I have ſeen a Sort of Inſect, in ſtagnate Waters, to ſwim on his Side in a ſwift Motion, almoſt in Shape like a Sea-ſhrimp, very tranſparent, in Magnitude about the Size of a Grain of Oatmeal.

Seventhly, *Of Water-worms.*——I have often ſeen Worms, in ſtagnate Waters, of different Sizes and Kinds, ſome as large as two Inches long; others not three quarters long, which were of an harder Subſtance.

Eighthly, *Of Water-maggots, or Grubs.*—I have ſeen various Kinds of theſe in ſtagnate Waters, and particularly where there is Mud, and the Water ſhallow. Here I have obſerved a Maggot to gather Sticks, or Straws, or other Soil, and creep with it on the Ground till his Legs grew uſeleſs, becauſe in this he incloſed himſelf, and bred Wings in his Hut or Houſe; and, at laſt, when he has got Strength enough, he crawls out of his Hut, takes Wing, and flies upon the Surface of the Water in the Summer. Firſt it is called a Caddis, and then a *May*-fly.——I cannot forget another Grub, which I have ſeen in the Country, in a Neceſſary-houſe, in the Summer, at the time the Excrement is all in Motion by Fermentation; and turns to a large Maggot with a long Tail, and ſeveral ſhort Legs; and then turns to a Chryſalis, and lies till it comes to Perfection, when it is like Bee, but with no Sting, and always takes its Pleaſure in Houſes-of-Office or Leyſtalls, where, I believe,

he

he lays his Eggs, and from them Maggots breed again.

Ninthly, *Of Water-ſpiders.*——Theſe I have frequently ſeen, both in ſtagnate Waters and Rivers. They run on the Surface of the Water, and are of ſo light a Nature, that they ſink not; but if you ſtrike at them with a Stick or Stone, they will either dive, or run away. They have ſix Legs, and four Wings; the under Wings are ſoft and tranſparent, and the others very hard, as are their Bodies. I have ſeen them catch little Flies, or ſmall Gnats, on the Water.

Tenthly, *Of the Eft, or Water-lizzard.*——There are Efts, a Sort of Water-lizzard, of various Colours and Magnitudes, with a Tail like an Eel, which I have ſeen to prey on the Water-lice, and ſmall Flies, as Gnats, *&c.*

Eleventhly, *Of Leeches.*——There are Leeches which breed in ſtagnate Waters, as the Horſe-leech, Leeches for bleeding, *&c.*

Twelfthly, *Of the Horſe-hair Inſect.*——I have ſeen, as ſome deſcribe it, a Horſe-hair, in ſtagnate Water, to have Life and Motion, which I have taken up, and it twiſted round a Stick; and, on my pinching it, I found it to twiſt itſelf all up into a cloſe Snarle; then I broke it in ſunder, by pulling it into two Pieces; and obſerved an outſide Skin, and its inner Part of a white Colour. The Root of the Hair ſeemed to be the Head, and the whole Body moved in a ſerpentine Line, as an Eel doth. I took ſome of the ſame Water and Mud, and put it into a Bottle, in order to ſee what it would produce; but the Confinement killed it.

Thirteenthly, *Of the Water-ſcorpion.*——I have ſeen, in a Tub of Rain-water, an Inſect, or living Creature, in Shape not unlike a Scorpion, with two Horns, and ſeveral Legs: The lower Part of its Body was all formed of globular Parts; had a

forked Tail, and a Body tranſparent, like a Shrimp. Before the Water is boiled, he riſes very often to the Top of the Surface, and is ſwift of Sight; for if you offer to touch him, he immediately ſinks to the Bottom, by throwing his Body ſide-ways in a very quick Motion to-and-again, like the Rudder of a Ship or Boat.

CHAP. XII.

Of Hay.

THE good and bad Properties of Hay.——— Of how great Conſequence it is for a Horſe to be fed on good Hay, and of how ill Conſequence it is for them to feed on bad Hay, is very clearly made appear by Dr. *Bracken*, at Pag. 110. in his ſecond *Book of Farriery*, where he gives the following Account of the Matter; *viz.* When a Horſe lives on Hay alone, unleſs the ſame is exceeding ſweet and fine, he fills his Belly with it to that degree, that the Blood-veſſels, as well as all the Glands, or Strainers of his Body, are ſtuffed and obſtructed, in ſome degree at leaſt: On this account he is obliged to drink a great deal of Water to dilute, as we call it, the Hay in his Stomach. This again increaſes the Preſſure mentioned, and the Lungs themſelves can ſcarcely be expanded ſufficiently to ſuſtain Life.

I have ſaid, that unleſs Hay is very ſweet and good, a Horſe will ſtuff himſelf too full of it, if he is kept conſtantly at it. This may ſeem a Paradox, becauſe one may imagine a Horſe would eat more good than bad Hay: So he will for a while; yet when he is grown pretty fat with green juicy Hay, he will not require a large Quantity; that is, he will not eat ſo large a Quantity as he

did at firſt: For conſider, a ſmall Quantity of good Hay contains as much Nouriſhment as a large Quantity of bad. And as the Horſe's Body muſt be ſuſtain'd, or rather as Nature is always ſtriving to bring the Creature to the higheſt Point of Health and Vigour, ſhe craves a conſtant Supply of nouriſhing Food; and therefore, if a Horſe be kept with bad Hay, he muſt conſtantly eat more of it; otherwiſe he could not be ſuſtained; yet this bad Hay has the Inconveniencies ſpoken of; beſides that, by it the Blood becomes ſo viſcid, poor, and deſpirited, that the Fibres of the Body are not ſupplied ſufficiently to drive it round in due Time and Order; from whence ſwell'd Legs, *&c.* proceed.

From hence it appears, that the more juicy it is, or the nearer it approaches to the Nature of Graſs, the more healthful it will be; therefore the Hay that is dried under a Shade is moſt natural; for the Sun extracts from Vegetables moſt of the nouriſhing Juice; I mean, when ſuch Vegetables are cut down, and ſpread abroad in the Sun for a time. This has been made appear by the learned *Boerhaave*, late Profeſſor of Phyſic at *Leyden*; and any Apothecary can tell by Experience, that the green Herb yields moſt Salt.——And again, he ſays in another Place, that ſome Horſes are of ſo fortunate a Make and Conſtitution, that they will look pretty ſleek and well, even with Hay alone, provided it be very good and ſweet, and given to them by a little at a time, well ſhaked from Duſt, *&c.* So far *Bracken.*

The Hendon *way of making and curing Hay.*—In my laſt Book, for the Month of *June*, I have wrote on the *Hertfordſhire* way of making Hay, and hope I have therein given ſome Satisfaction to my Readers. But as I have ſince met with new Informations, and made new Obſervations on this

Account, I further add, that by the aforeſaid Dr. *Bracken*'s writing on Hay is ſhewn how valuable good Hay is to a Horſe, in compariſon of the worſer Sort; therefore, as the Quality of good Hay ought to be endeavoured for, for the ſeveral juſt Reaſons this ingenious Author has aſſigned, I ſhall now proceed to give an Account of the excellent *Hendon* way of making Hay; becauſe theſe Farmers are reckoned the beſt in *England* for curing their Hay, by making it ſo as to retain a green Colour for Years together, in order to obtain the greater Price at the *London* Market, where they ſell moſt or all their Hay at times throughout the Year; for ſeveral of theſe Hay-farmers live within ſix or ſeven Miles of *London*.

The firſt Day—They mow, and let the Graſs lie in Swarths.

The ſecond Day—They begin to ted it at Eight o'Clock in the Morning: At Ten they turn it againſt the Wind, that breaks the Juſſocks, which otherwiſe hang together, and would fall heavy. At Two o'Clock they turn it again contrary to the laſt way: Then in the Evening they take it into Wind-rows, and ſet it up in Graſs-cocks.

The third Day—As ſoon as the Dew is off, they break the Hay into ſquare Staddles, and afterwards turn them two or three times the ſame Day, and at Evening ſet it up in Baſtard-cocks.

The fourth Day—They break it out into Staddles again, and give it a Turn or two that Day. Then they ſet it up in great Cocks fit for Carting. ——This way makes it of a fine green Colour, without which there are little Hopes of Sale. But in caſe of Rain, they run it up in great Cocks to ſave the Colour, to obtain which is their chiefeſt Art.

Latter Meath, or ſecond Mowing—They make the very ſame way. This After-meath, or, as ſome call

call it, Rowen, they ſell to the Cow-keepers about *London*; for as hard Hay is beſt for Horſes, the ſecond Mowing, or ſoft Hay, is deemed as well for Cows; and for this Purpoſe is the better liked of, becauſe it is cheaper than the firſt Crop.

Of the Lady-finger Graſs, and ſome other Sorts.—Here they ſay the King's-finger Graſs (for here it goes by that Name) is the beſt of Graſſes, grows with a yellow Flower, and grows ſomewhat like a wild Thetch in Kids.——Red Honeyſuckle, they ſay, is a very good Graſs; and that the white Honeyſuckle is ſo too, but is weaker than the red, becauſe it is only a ſecond Shoot from the ſame Root. Black Bennet, and Couch-graſs, they ſay, grows much among their Corn, becauſe they ſow their plow'd Land every Year, and ſeldom or never ſow Clover: They ſay their Land is too heavy for it. Here they have the blue, the red, and the yellow Tare-tyne, or wild ſort of Thetch, which is accounted an excellent ſort of Graſs; and where it grows thick, hangs ſo together, that a Perſon may ſhake it a Pole or two together. They have likewiſe the fine three-leaved wild Trefoil-graſs, the wild Ray-graſs Bennet, and the Wheat-bennet; which laſt, when ripe, ſhews their Graſs is fit to mow, and this is a Rule they often go by. The fineſt Graſs or Hay is the worſt when wetted.

CHAP. XIII.

Of ſaving Crops of Turnep-ſeed.

Several new ways to defend a Crop of Turnep-ſeed againſt the devouring Field-fowls.——In my firſt Book for the Month of *June*, at Pag. 41. I have there given an Account of ſaving Turnep-

ſeed

ſeed by the Help of a Gun, *&c.* but as this Inſtrument is an expenſive one, and only fit to be uſed by a Man, it does not ſuit every one's Conveniency to protect a Crop of Turnep-ſeed in this manner. Yet if it is not protected from the Rapine of Birds by one means or other, it is in vain for any one to pretend to ſave the Seed; and as *June* is the Month for ſaving and cutting down Turnep-ſeed, I ſhall here give a further Account how a Crop of this Seed may be ſaved very ſurely, and very cheaply, at this Seaſon, when the Birds are moſt eager on this ſort of Prey; for they are not invited to feed on this Crop till the Seed is in Pod; and then they never fail to attack and devour it, if they can.

Firſt way to defend Turnep-ſeed from Field-fowls.—If there be any Trees, Hedges, or Shrubs, or any thing near the Turnep-crop for Birds to ſettle on, Lime-twigs may very ſucceſsfully be made uſe of, by laying them on any of theſe. Then if a Man or Boy goes near the Crop, and frights the Birds away from it, they will be apt to ſettle on the Part where the Twigs are, and be caught; or if they are not caught, and brought to hand, they can never fly afterwards, but muſt die in one obſcure Place or other.

Second way of defending a Turnep-crop from Birds, as perform'd by a Farmer at Cheſham *in the County of* Bucks.——A Man at *Cheſham* took this Method to keep Birds from his Turnep-ſeed, when in Pod, and they had begun to turn yellow. He faſtened near one hundred ſmall Bells on a Packthread, or a very ſmall Cord; and fixed it along and about the Sides of the Turnep-crop, in ſuch a manner, that a Boy being placed near it in Ambuſcade with a little Gun in his Hands, he was ready to pull a Line, that moved other Lines that had the Bells on them; and by this means made all the Bells ring at once, which, frightening the Birds, cauſed the Flock

to

to ſettle at once on the neareſt Tree, Hedge, Shrub, or any other Contrivance laid near the Place for this Purpoſe, and then ſhot off. By this the Farmer preſerved his Turnep-ſeed ſo well, that he had a Peny a Pound more for his than others could ſell for, who had the beſt Seed pluck'd out by Field-fowls, and the worſt expoſed to Sale.—— This Fact is a very material one, and of great Conſequence to thoſe who make it their Buſineſs to ſave Turnep-ſeed; for, in ſome ſcarce Seaſons, the choiceſt Sort of Turnep-ſeed ſells for a Shilling a Pound; and then, if a Perſon can ſave his Crop intire from the Damage of Birds, he may get, perhaps, more by this Crop than any other he is Owner of; and altho' I have mentioned near a hundred Bells uſed for this Purpoſe, yet a Quarter of that Number may ſerve, where the Crop ſtands on a leſſer Compaſs of Ground.

CHAP. XIV.

Of ſowing Turnep-ſeed.

HOW a Farmer ſufficiently dreſſed a Piece of Ground for Turnep-ſeed, and yet had but a poor Crop.——A Farmer, to get a good Crop of Turneps, gave his Field only two Plowings inſtead of three, which occaſioned him to have but a rough Tilth, when he was to ſow his Turnep-ſeed; however, the Seaſon preſenting itſelf, he ſow'd his Seed, and in Return had a poor Crop of Turneps. The Reaſon was, that although he double-folded or dreſs'd his Land under a rough Tilth, it was not in ſo good a Condition as it would have been, had he given it three Plownings to get it fine, and a ſingle Folding; for a fine Tilth, and no Dreſſing,

ing, is better than a bad Tilth, and a good Dreſſing.

Dew-plants of Turneps.——What we call Dew-plants is that Turnep-ſeed that lies on the Surface, expoſed to the Dews, which, in ſuch a Situation, moiſten the Seed to that degree as to force it into the Growth of Turneps in four Days time, in the drieſt Seaſons. But this is not an abſolute Sign of the whole Crop taking; for though the Dew-plants appear, which are but few, that Seed that lies deeper may not appear in two, three, or four Weeks or more afterwards; but if Rain falls quickly after the Dew-plants appear, then the whole Crop is all up at once.

New-broken-up Ground not proper to ſow with Turnep-ſeed.——New-broken-up Ground is unfit for ſowing Turnep-ſeed on, becauſe ſuch Ground will be rough and ſour; and, therefore, it ought to have three or four Crops of Grain ſow'd on it firſt, that the Land, by repeated Plowings, Harrowings, and Sowings, may be reduced into a fine clean Tilth. But if ſuch Ground could be got fine at one Plowing, it would be improper to ſow Turnep-ſeed on it; for that the Richneſs and Rankneſs of ſuch new Ground would cauſe the Turneps to grow rank, and unfit for Man or Beaſt; for a Sheep, as well as a Man, loves a ſweet Turnep, and will thrive accordingly on the ſame.

Why Harrows are ſometimes employ'd before the Hand-hoe, for improving a Turnep-crop.——This has been found to be a very ſucceſsful way, when Turneps appear too thick; and the more ſo, when the Ground has got hard by the Fall of heavy Rains quickly after the Turnep-ſeed is ſown: Then after the Turneps are got big enough for the Hand-hoe, the Harrows, by being drawn over them once or twice in a Place, will not only thin their Numbers,

bers, but at the ſame time looſen the hard Surface, and give infant Plants an Opportunity to ſtrike their Roots with Eaſe and Freedom into the Earth, for their greater Nouriſhment, preparatory for the Hand-hoe to follow preſently after; for where the Surface is hard, the Turneps will languiſh, inſtead of thriving; nor can the Hand-hoe penetrate deep enough, in this Caſe, to give the Turneps ſuch a ſufficient Quantity of Mould as is requiſite for their Aſſiſtance. And a Gravel, which is accounted one of the beſt of Soils for producing the ſweeteſt Turneps, is the moſt liable of all others to acquire a hard Surface by the Fall of haſty and heavy Rains. This Piece of Huſbandry an old Farmer near me gave the greateſt Example of, that I ever knew; and he often ſucceeded in the Enjoyment of very profitable Crops by this means.

Of the erroneous Way that ſome take to get a Crop of Turneps, without Hoeing.——In *Nottinghamſhire*, and in ſome other Parts of the North, they ſow their Turnep-ſeed in the broad-caſt Way, with an Intention not to hand-hoe their Turneps: And, that the Seed may thus produce a large Crop, they plow well, and muck well, and ſow only half the Quantity of Seed; we uſually do in the Southern Parts of *England*, on purpoſe that the Turneps ſhould grow thick enough for Hoeing. This, I muſt confeſs, happens ſometimes to prove a good Crop for feeding their Sheep, Cows, or Oxen, in the Field: But this is Money falſely ſaved; for if an Acre of Ground had no Turnep-ſeed ſowed on it, and was hoed all over at five Shillings an Acre, it would well pay the Charge; becauſe good Hand-hoeing is near as good as plowing; and this the next Crop of Grain would plainly prove, by ſhewing to a tittle, how far the Hoe was employed. The Hoe, therefore, is well known, not only to keep down many Weeds, and kill others; but it

likewiſe keeps the Ground fine and ſweet, and cauſes the Turneps generally to grow as big again as otherwiſe they would be, unleſs a very favourable wet Seaſon happen to ſuch unhoed Turneps, and they luckily ſtand thin enough by Accident; for I can call it no other, becauſe when ſuch a regular full Crop falls once to the Owner's Share, by omitting hoeing it, I dare ſay he miſſes twice or more of it. Wherefore, I ſhould think no wiſe Farmer ought to truſt to ſuch a Chance, for two Reaſons: One is, If his firſt Sowing miſſes, fine Weather for plowing and ſowing again may not happen a ſecond time in that Seaſon: The other is, If he ſhould be diſappointed, and not get a Crop, he may ſuffer much, by being deprived of a Winter Subſiſtence for his Cattle; and ſo of a Dreſſing for a ſucceeding Crop of Barley. If a *Hertfordſhire* Farmer was known to neglect hoeing a Crop of Turneps, on purpoſe to ſave Money this way, he would be readily cenſur'd for one of the worſt of Huſbandmen. However, ſo it is, that in ſome of the Northern Counties, they wilfully neglect it; and as Cuſtom rivets them in it more and more, they are ſo far from being brought over to the Practice of Hand-hoeing Turneps, that ſome ſtrenuouſly argue againſt it, and ſay it is a needleſs Expence. But were theſe Northern Farmers to ſee how the *Middleſex* Men hoe their Horſe-beans, even where the Seed was ſown in the promiſcuous way, I ſhould think it would be enough to convince them of the Benefit of Hand-hoeing, and alter their old wrong Notion, that Hand-hoeing Turneps is an unneceſſary Expence. But I will put the Matter upon this fair Iſſue: Let a Crop of Turneps be hoed, and another unhoed; the Crop of Barley that follows the firſt, if fed off, will be twice as good as that which follows the laſt. And, that we may with the more Aſſurance hope for a plentiful Crop of

Turneps

Turneps and Barley, in *Hertfordſhire* we commonly ſow three Pounds of Turnep-ſeed on each Acre, with an Intent there ſhall be enough for the Fly, the Owner, and for employing the Hand-hoe to thin the Crop. But ſince I am here engaged in writing on the Northern Way of ſowing Turneps not to be hoed, I ſhall proceed to ſhew the beneficial Uſe of the Sheim Inſtrument, that would be very ſerviceable to all thoſe who would not be at the Charge of Hand-hoeing Turneps.

How the Sheim Inſtrument ſupplies the Place of Hand-hoeing Turneps.——Now thoſe Northern Farmers, who think it an extravagant Charge to give five Shillings for Hand-hoeing an Acre of young Turneps, ſhould have the triangular Sheim Inſtrument by them, ready to be made uſe of for ſupplying the Hand-hoe; which it will do, though the Turneps come up ever ſo thick. The Time for uſing the Sheim is, when the Turneps are large enough for Hand-hoeing; then we faſten three or four Horſes in Length to it, that, I will ſuppoſe, has only eight little iron Hoes, or Feet, left fixed in a Row, on the outſide wide Beam, or third Part of the Sheim: For, in this Caſe, the three Hoes, that, at other times for other Uſes, ſtand fixed in each of the other two Side-beams, and the ſingle Hoe that ſtands in the Middle, to make up the whole Number fifteen, are taken out. When the Sheim is in this Order, the Ploughman holds it by its two fixed wooden Handles, while the Horſes draw it in a ſtrait Line; and thus forces the Hoes to tear up and deſtroy all the young Turnep-plants that ſtand in their way; leaving only thoſe to grow, that ſtood in the Interſpaces between each Hoe: Thus the Breadth of three or four Feet of Ground may be hoed at a time, by the Horſes Draught; and, in one Day's Journey of eight Hours Work, there may be three Acres, or more, of Ground,

thus hoed long-ways. But if, after this firſt Operation, the Turnep-plants are thought to ſtand too thick, the Sheim may be drawn again the Croſs-way, contrary to the laſt; which will hoe all the Turnep-crop in ſquare Work, in the neareſt Imitation of Hand-hoeing that can be done by Horſes drawing. And, indeed, I muſt needs ſay, this is an excellent cheap ready Way; becauſe, to have always ſuch an Inſtrument ready in the Turnep-ſeaſon, may ſave a great Farmer Scores of Pounds in one Year's time; I mean a Farmer who may ſow fifty or a hundred Acres of Land with Turnep-ſeed in a Seaſon: For ſuch a great Farmer, it is to be ſuppoſed, can't get Hands enough, at pleaſure, to hoe ſo much Ground ſo ſoon, as to preſerve the young Plants from ſetting, or what we call burning or ſtunting, and, conſequently, ſpoiling. Here then is propoſed a Remedy that may be had at a cheap Rate; and, when once had, will laſt many Years with careful Uſage, not only for improving Turnep-crops in the cheapeſt and quickeſt Manner poſſible, but likewiſe for performing other Works in Husbandry. It is this ſame Inſtrument, that, when it is furniſhed with all its fifteen little iron Hoes, and drawn over a Field of light Earth, that has been plow'd before with a common Plough, to get it tolerable fine; I ſay, when Ground is in this Condition, the Sheim, if drawn long-ways and croſs-ways over it, will fine it to an admirable Degree, and make it ready and fit to ſow on it Turnep-ſeed, Wold-ſeed, Cole-ſeed, Flax-ſeed, Wheat, or Barley, *&c.* and diſpatch more of ſuch Work in one Day, than four Horſes in a common Plough can do in three. This is Fact; and which any Perſon may find true, if they will have one ſent them for a Trial; which I can do by Ship or Waggon, for a Trifle of Charge, in compariſon of the great Service it will do: For I publiſh this from

from the Field of Experience, and not from a Chamber of Theory-writing. Therefore, all Gentlemen who occupy arable Land, and ſow Turnep-ſeed, Corn, and artificial Graſſes, *&c.* ſhould, though they plow but little Land, have one of theſe Inſtruments; for, if they have but little Land in their Hands, it will help a few Horſes to do a great deal of Work in a ſmall Space of Time; and, if they hold a great deal, it will ſtill ſave much of Man's and Horſes Labour: And how valuable theſe Articles are, every Farmer is ſenſible of, without Information; for I am perſuaded, that if this, and ſome other Inſtruments, at this Time unknown to Thouſands, were made uſe of by them, the preſent low Market for Grain, *&c.* would not hurt them; becauſe, by theſe means, they would be able to carry on their Farming-buſineſs with a great deal leſs Expence, and do it in leſs time than it is uſually done in the common Way of performing it; which are the two main Things all Perſons concerned in Agriculture eagerly wiſh to enjoy. But it is to be ſuſpected few will go out of their common Road of Practice, to buy or make uſe of this cheap, diſpatching, ſerviceable Engine, much leſs for others of a greater Price.

The great Improvement that may be made by ſowing Turnep-ſeed in Drills, and Cole-ſeed in the Intervals.— In my monthly Book of the *Modern Husbandman*, for *June*, at Page 27. I have there amply wrote on the Benefits conſequent on ſowing Turnep-ſeed in Drills: But as I am become Maſter of more Knowlege in this valuable Branch of Huſbandry, I ſhall here reſume the Subject, in order to give an Account of the great Improvement that may be made by ſowing Turnep-ſeed by the Drill-plough, in Drills four Feet aſunder, and ſowing Cole-ſeed, broad-caſt, in the Intervals or vacant Spaces between the Drills. Now this ſort of Huſbandry is

confined

confined moſtly to loamy Soils; for dry Gravels, Chalks, and Sands, are not moiſt nor ſtiff enough to nouriſh the Cole-plants in Perfection: But where the Land is proper, Turneps may be drilled in the latter End of this Month, and the Cole-ſeed at the ſame time ſown broad-caſt between the Drills, which a good Sower will eaſily do; and when the Turnep and Cole-ſeed is ſown, a light Harrow may be drawn over all, and the Land harrowed once or twice in a Place, which finiſhes the whole Work till Hoeing-time. Then, if the Weather has been agreeable, the Turneps and the Cole may be hoed at one and the ſame time; or the Turneps may be hoed firſt, and the Cole afterwards, when it is big enough to hoe; or the Turneps may be hoed, and the Cole always left unhoed. The main end of ſowing Turnep ſeed and Cole-ſeed this way, is to give the Owner an Opportunity to draw the Turneps, and feed Sheep, Cows, or Oxen with them off the Ground they grow on; for Turneps may be ſown in that Ground, which by wet Weather will not endure to be fed on by Cattle, leſt they ſtolch the Land, and ſpoil the Turneps. And as Turneps, for the moſt part, get into their appling Condition, and be fit to eat, ſooner than the Cole, the Cole, after the Turneps are carried off, may be either fed on the Place by Sheep, Cows, or Oxen, or cut, and given them at times in other Parts. This is a very late Improvement, practiſed only by a very few nice Gentlemen, who are very much in the right of following this Practice, becauſe by theſe Vegetables they are capacitated to feed Cattle ſooner and later in the Field and at Home. But there is another Uſe that Cole may be put to, which I never yet wrote of, becauſe I never knew but one Gentleman do it, and that was very lately;

ſo

ſo that I muſt defer publiſhing this ſerviceable Secret till a proper Month.

How Turnep and Cole-ſeed were ſown promiſcuouſly together.——This was done in an incloſed gravelly loamy Field, in this Month 1743. by a Neighbour of mine, where both Sorts of Seeds took the Ground well by being harrowed in, came up, and were hoed at one and the ſame time. But it happen'd that ſuch Sowing was performed too early; for dry Weather ſucceeding for a long time, and the Soil being ſomewhat of a hot Nature withal, the Cole run up into Seed before the Summer was out, got ſticky, and good for little. Therefore both the Turneps and Cole-ſeed had been better ſown a Month later in ſuch a Soil, that the Coldneſs of the Weather might have retarded their Growth, and kept them all the Winter in Suſpence of Growth, that in the Spring time the Cole might have been invigorated with Heat enough to grow again for feeding and cutting.

The Caſe of a Farmer, who ſowed a whole Field with Turnep-ſeed at one and the ſame time; and how one Part took, and ſtood well, when the other Part miſſed.——This happened to be a Farmer's Caſe in our Country, who having plowed a five-acre Field ſeveral times to get it into a fine Tilth, and after laid all the Dung he had on the ſame, that dunged four Acres and a Rood of the Field, leaving three Roods undunged; which to ſupply, he penned his Sheep on the ſame; and when all the Field was thus well dreſſed, he plowed and ſowed it all over with Seed of the green round Turnep, as he eſteemed this the beſt of all others, becauſe theſe Sort grow up with ſmall upright Leaves, ſo that there may be many more of theſe grow on an Acre of Ground, than others that have broad-ſpreading Leaves, which take up a great deal of Room, and hinder their ſtanding

cloſe;

close; though this green round Sort may be called a large Turnep, is a very sweet one, goes but a little way into the Ground, and will stand the Frosts extraordinary well. But the green Tankard, and red, large, round Turnep, he rejects, for that the first rots by frosty Weather, by their standing high out of the Ground, and the other by taking too little Hold of it. This round green Turnep-seed he sowed about the Beginning of *June* 1743. and the Consequence was, where the Dung was laid on four Acres and a Rood of this inclosed Field, the Fly bred, or were invited to harbour, on the same Piece of Ground, in such Numbers, that they eat up the young Turnep-crops; when the three Roods of Ground escaped their Rapine, and was as full of Turnep-plants as it could hold. And it was remarked by many, that where-ever Dung was laid this hot dry Summer to nourish a Turnep-crop, the Fly destroyed them. But where the Ground was dressed for a Turnep-crop by the Fold, the Turneps stood well; for the Dung and Piss of Sheep is of so strong a Nature, as almost always proves an Antidote to the Fly, and intirely prevents their Mischief.

The profitable Nature of the white round and the green round Turneps; and the unprofitable Nature of the great red round and Tankard Turneps.——Of all these Turneps in the last Article I have given some Account, except the white round Turnep; and therefore shall proceed to say somewhat of this, and that is, that this white round Turnep is an excellent Sort; for it is an early and late Turnep, a Summer and a Winter one, according to the time of sowing the Seed. It apples or bottles into a little longish Round, is of a middling Size, and will endure Weather well, being a fit sweet Turnep for either Garden or Field Uses. On the 30th Day of *June* 1744. a *Hempstead* Gardener

carried them about the Country in a Cart, and ſold them in ſmall Bunches for a Peny each, being but nine Weeks old from the Sowing of the Seed. There is alſo another white early Turnep, that for many Years paſt has been ſown as the earlieſt Sort of all others, generally called the *Dutch* Turnep, but by ſome called the Mouſe or Rat-tail Turnep, of a very clear white Colour, and of ſo flat a Body, that it is very apt to crack, canker, and ſpoil its Sale: Therefore, at this time, is in Diſeſteem with many, who have left that Sort off, and ſowed this longiſh round Turnep in Preference to it.

How a Gentleman's Bailiff ſowed a Field with the Seed of the great round red Turnep, and loſt the Crop by it.—This Bailiff, as the choiceſt Turnep-ſeed he could get, ſowed that of the great red round Turnep, and the Seed produced the biggeſt Sort this Country afforded: But as their Roots run but a little Way into the Ground, moſt of the Turnep was above it, I may ſay near all of it; and though, when they came to be eaten, they looked ſound, yet they were puffy, and decaying into Rottenneſs, ſo that the whole Crop was worth very little. But if they had been ſound when they were begun to be eaten by Sheep, they would have been ſpoiled; for as they were very large, upon the Sheeps biting their Tops, they loſt their Hold in the Ground, and when tumbled about, they quickly daubed and, ſpoiled. But the green and white round Turneps take a middling Hold in the Earth; grow pretty large; and as they grow more couchant than the Tankard Sort, will better reſiſt Froſts and Wets, and are not ſo liable as the Tankard Turnep to be pecked and damaged by Wood-pigeons, Crows, Daws, *&c.* but may be ſcooped by Sheep to the laſt.

CHAP. XV.

Of the Preſervation of Wheat.

AS an Introduction to this Chapter, I ſhall make uſe of Mr. *Worlidge*'s own Words, becauſe he has wrote very uſefully on this Account, when he ſaid, That the Preſervation of Corn, when it is plenty and good, is of very great Advantage to the Husbandman, and the Kingdom in general; for in ſcarce and dear Years the Husbandman hath little to ſell to advance his Stock, and the Buyers are uſually furniſh'd with muſty and bad Corn from foreign Parts, or from ſuch as were ignorant of the ways to preſerve it.

Therefore, in cheap Years, it will be very neceſſary to make uſe of ſome of theſe ways for the ſtoring up your Plenty of Corn, againſt a time of Scarcity.

The way of making it up in Ricks, or Rick-ſtavals, ſet on Stones, that the Mice may not come at it, is uſual and common.

But Corn threſh'd, and clean winnow'd, is apt to be muſty; therefore ſome adviſe, that you lay up your Corn in the Chaff in large Granaries made for that Purpoſe, ſecure from Mice; and when you uſe or ſell it, then to winnow it.

Alſo it is adviſed to mix Beans with Corn, and that it will preſerve it from Heating and Muſtineſs. It is probable, that if the Beans are well dried on a Kiln, it may ſucceed; for then they will attract all ſuperfluous Moiſture unto them, which is the only Cauſe of the Injury to the Corn; for in *Egypt*, where it is ſo dry, Corn will keep in open Granaries many Years, as in *Pharaoh*'s time. The Beans are eaſily ſeparated afterwards from the Corn.

It

It is reported, that Pieces of Iron, Flint, Pebbles, *&c.* mixed with Corn, preſerve it from heating, which may be true; for it is uſual to ſet a Stick an-end in Corn, only to give Paſſage for the Air, to prevent heating. A large Granary, full of ſquare wooden Pipes, full of ſmall Holes, may keep long from heating, tho' not ſo well as the Chaff, Beans, *&c.*

Alſo ſome have had two Granaries, one over the other, and fill'd the upper, which had a ſmall Hole in the Bottom, that the Corn by degrees, like Sand in an Hour-glaſs, hath fallen into the lower; and when it was all in the lower, they removed it into the upper, and ſo kept it in continual Motion; which is a good way to preſerve it.

The beſt Granaries are thoſe built of Brick and Quarters of Timber, wrought in the Inſide, whereto you may nail Boards, with which you may line it ſo cloſe to the Brick, that there may be no Shelter for Vermin. You may make many Stories, one above another: Let them be near the one to the other; for the ſhallower the Corn lieth, the better, and is the eaſier turned; which will be very neceſſary to do ſometimes.

The way of preſerving Corn in Granaries may be very advantageous againſt a dear Year; but if you keep it too long there, it may be unprofitable, and is not ſo practicable here as in the *Low Countries* (He means *Holland*):

Firſt, Becauſe *England* itſelf is, as it were, a Granary for theſe Countries, when they have ſcarce any there, but what they buy abroad, from hence, or elſewhere; and therefore muſt have Granaries to lay up their Corn in, when they buy it.

Secondly, In caſe they ſhould not buy (when it is cheap) more than they preſently uſe, in dear Years they muſt expend great Part of their Wealth abroad for Corn; when, in *England*, in caſe it be

ſometimes dearer, yet our Wealth goes not farther than to the Farmer, except in times of great Scarcity, which do not happen above once in ten or twelve Years.

Thirdly, In time of War they cannot have Corn ſo certainly imported as in time of Peace; ſo they are compell'd to provide againſt a wet Day, as Husbandmen uſually term it; when, on the other Side (let the Seas be never ſo much troubled), we have our Corn at home.

So that the principal Uſe of a Granary is againſt a very dear Year; therefore it is moſt adviſeable to diſpoſe of your Corn in your Granary every other Year, and lay up a new Store at a low Market; for by the ſhrinking of the Wheat, and the Age of it, you may otherwiſe ſuffer more than the Grain of a dear Year can recompenſe you.——— So far Mr. *Worlidge*, which leads me to advance what I have to ſay on this important Subject; and that is,

How a Gentleman built ſeveral convenient Granaries for preſerving Wheat, in order to improve his Fortune by trading in the ſame; and how he ſuſtain'd conſiderable Loſſes by wrong Management.——This Gentleman was the younger Son of an honourable Family, who, having nothing but the Improvement of his Money to increaſe his Fortune with, fell in with a Project of doing it by buying Wheat in a cheap time, in order to keep, and ſell it out again at an advanced Price. To this Purpoſe he built ſeveral convenient Granaries, or Store-rooms, that held ſome hundred Quarters of this Grain; and that in ſo commodious a manner, that he could let the Corn in an upper Room deſcend by a ſmall Stream into a lower one, which, by returning into its former Loft, might be made to run down again, and ſo be continued at Pleaſure; which proved a ſort of Fan to the Grain, and contributed very

much to clearing the Wheat of its Duſt, and preſerving it ſweet. So far he was abſolutely right. But as I have here ſhewn the better, I ſhall now ſhew the worſe Part of his Management, and that was this: He, for much the greater Quantity, bought right dry plump Wheat, that would keep ſound Years together; and thus went on well for ſome time, till he embraced a wrong Notion, for Cheapneſs-ſake, of buying Wheat that was not thorough dry, thinking (I ſuppoſe) that a little Quantity of ſuch Wheat would not hurt the greater Quantity of dry Wheat. Yet ſo it happen'd, that the little Quantity of damp Wheat damaged the greater Quantity of dry Wheat; for the Moiſture of the former was made to ſweat out by the Heat of the large Body of the latter it lay amongſt; which Moiſture, ſo extracted, infected the dry Wheat, and ſo one Parcel another, till moſt of it ſuffered, and the Gentleman was forced to ſell it at a lower Price than ordinary. And going on in this manner, he in the End loſt more than he got, chiefly becauſe he was not Maſter of Judgment enough to buy a right Sort of Wheat for his Purpoſe: Which leads me to ſhew the Value of a Book of Huſbandry in this one material Branch of Knowlege; *viz.* how to buy a right ſort of Wheat to lay up, in order to improve the trading Peny; for if this is not truly underſtood, a Perſon that undertakes this Buſineſs may run out a Fortune, inſtead of acquiring one, and thus ruin himſelf and Family. Of this Matter I could, were it convenient to mention Particulars, give Inſtances of gaining and loſing on both Sides; of which I ſhall only touch hereafter in a general way, and at preſent proceed to give a further Account of a convenient Granary erected in a foreign Country.

A large Granary deſcribed, as it was built at New Brunſwick, *or* New Harlem, *for the Preſervation and Stowage of Wheat.*——*Houghton* ſays it ſhould be three hundred Feet long, eighteen wide, and Lime within the Walls; ſeven Stories high, each ſeven Feet high, built with burnt Brick and Sand. The Ends muſt be North and South. In the Sides there muſt be large Windows, to open well, and ſhut cloſe: When theſe be open, and the Corn ſtirr'd, the Duſt will fly as the Wind ſits. In fair Weather they muſt be open, to have the Corn dry; and in other Weather they muſt be ſhut, and a Fire muſt be in Stoves in the Middle, to keep all dry. There muſt be Troughs or Spouts to throw it from the upper Granaries to the loweſt, and into the Barges, and Cranes to turn in when Need be. And the Charge of this, at *New Brumſwick*, or *New Harlem*, he reckons at 820 *l.* but it will keep 14000 Quarters of Corn, and ſix Labourers, with one Clerk, will manage it: And their Wages he reckons at 120 *l.* which, with 80 *l.* the Intereſt of the firſt Charge at 10 *l. per Cent.* the yearly Charge will be 200 *l.* 6 *d.* the Quarter, for keeping the 14000 Quarters of Wheat, which is 350 *l.* a Year for Granary-rent.——Mr. *Houghton* ſays further, that it is the Dearneſs of Corn that encourages the Farmer not only to pay his Rent well, but to live high, and to improve all unimproved Land within his Reach, which will ſtill increaſe Trade and Revenue; and the Neceſſity will make the Manufacturers work harder, and that will increaſe Manufactures. To which I add, that when Wheat is dear, Cattle is dear, *&c.* becauſe then the Farmer has Money to lay out; but when Wheat is cheap, all elſe is cheap.

The ſeveral ſorts of Perſons that are uſually concerned in laying up and keeping Wheat againſt a riſing Market.

Market. ——— Theſe are generally four ſeveral Sorts: Firſt, The Gentleman and Yeoman. Secondly, The Farmer. Thirdly, The Mealman. And fourthly, The Traunter. Of theſe ſeveral Sorts I intend to give ſome Account, as follows. And, firſt, Of the Gentleman or Yeoman.

Of the Gentleman or Yeoman's laying up Wheat, and keeping it againſt a riſing Market. ——— The Gentleman and Yeoman I would here be underſtood to treat of under one Denomination, becauſe theſe, for the general part, are the richeſt Perſons in the Nation, and therefore the moſt capable of all others to bear Stock (as we call it in *Hertfordſhire)*; that is, to lay out and expend Money, from time to time, for Years together, without getting any by the Sale of his Wheat; for this is a ſort of Gain that is coveted, and endeavoured after, from the Duke to the Peaſant, as I ſhall hereafter make appear.

Tho' Jews, Turks, Chriſtians, *diff'rent Tenets hold,*
Yet all agree in idolizing Gold.

And this is done in hopes that a Market will hereafter riſe to a greater Price of Profit than at preſent it affords, and thereby double or treble his Gain; for this Purpoſe it is, that he lays up this his golden Grain in Stacks, or in Cocks abroad under the Cover of Thatch, or that of Boards, made in the manner of a *Dutch* Barn, and on Pedeſtals of Brick or Stone, to prevent Mice and Rats entering and damaging them, and for preſerving his Corn ſweet and ſound, by the Benefit of the circumambient open Air, that blows around them; or has his Wheat thraſh'd, and then ſtores it up in its Chaff in Granaries, or keeps it in Sacks; which ſeveral ways of Preſervation I ſhall ſpeak of in their Places.

How

How a Yeoman ſuſtain'd great Damage by laying up great Quantities of Wheat againſt a riſing Market, and vowing he would ſell none of it till the Market roſe to four Shillings a Buſhel.——It is well known at *Gaddeſden*, and Parts adjacent, that a Yeoman of a conſiderable landed Eſtate, who kept it in his own Hands, and occupied it as well as moſt Men (for he was accounted a good Huſbandman), had ſuch an Itch to get Money faſter than his Neighbours, that he hoarded his Corn for ſeveral Years together, becauſe he vowed he would not ſell it till it was four Shillings a Buſhel. And, ſure enough, he kept his Word unbroken till he died, which, if I am not miſtaken, happened near the ſeventh Year after he had begun magazining his Wheat in Ricks, Stacks, or Cocks. Now this raſh Vow of his was attended with a ſad Conſequence; for when his Executors came to take the Wheat into the Barn, for threſhing it out to ſell it, there was a prodigious Number of Mice found in his Ricks, that had devour'd his Corn in very great Quantities, and damaged a great deal beſides. And what added to the Misfortune was, he borrow'd great Sums of Money, in order to ſuſtain the many Expences occaſion'd by his thus laying up a very large dead Stock of Wheat for ſeveral Years.

How a wicked Yeoman came off a great Loſer by keeping Wheat too long.——About eight Miles from me, about the Year 1724. lived a rich wicked Yeoman, who kept two Sorts of things too long: One was a Parcel of Whores in his Houſe, and large Parcels of Wheat abroad in Ricks, in Cocks, and in his Barns; for this Perſon rented the Tythes of a very large and famous Pariſh, which gave him an Opportunity, with what Corn his own Eſtate produced, to amaſs, in a few Years, prodigious Quantities of Wheat; and this he did on purpoſe

purpoſe to obtain a greater Price for it than ordinary. But ſo it happened, that he was diſappointed of his Deſign of getting a great deal by ſuch Stowage; for he died before it was ſold, and left his vaſt Stock behind him, that he had hoarded up ſeveral Years, till at laſt good Part of it was ſpoiled through Age. He was a notorious wicked Liver; and who, among the reſt of his unjuſt Deeds, railed-in a diſtant Parcel of open Field-ground, that lay on the Edge of the Vale of *Aleſbury*, contrary to all Law and Reaſon, and very much to the Damage of the poorer ſort of People, who, before this, uſed to enjoy, after ſuch a certain time of the Year, a Liberty for their Sheep or Cows to feed on the ſame: And upon his being aſked, Why he did ſo? he ſaid, Go to Law with me, if you think fit.

How a Gentleman hired a Store-room in a Market-town for laying up and keeping Wheat againſt a riſing Market; and how it was ſpoiled for Sale.——In the Year 1741, a Gentleman bought a great Quantity of Wheat at Market, and ſent a great deal of his own thither beſides (for he held a large Farm in his Hands), to lay up for a future Sale. To this Purpoſe he hired a Store-room in the ſame Town, as a Loft or Granary to keep it in; but, being unſkill'd in the Buſineſs, he mix'd ſome damp Wheat with his dry Wheat; and that produced ſuch a Heat and Fermentation as bred a great Moiſture, and even wetted all the Heap, to a conſiderable Damage; for by this means it quite ſpoil'd the Sale of it, becauſe it matted together; inſomuch that if a Sack of it was cut, it was thought the Wheat would not fall into Parts. This obliged him to fetch it away from the Loft, and carry it to the Mill, to break the Kernels, and fit them the better for feeding his Hogs with it; for it was not fit for human Uſe. By this wrong Management the

Gentleman ſuſtain'd a great Loſs; for he was offer'd ſix Shillings a Buſhel for all or moſt of it. But, refuſing this good Price, he kept it on till ſound Wheat ſold, in *September* 1742 for, three Shillings a Buſhel, when his damaged Wheat could not be ſold at all.

How ſeveral Perſons were deceived in keeping Wheat too long before they ſold it.——On *Thurſday* the 16th of *April* 1742, there happened to be the biggeſt Market at *Hemſted* in *Hertfordſhire* that had been known for many Years before. The Reaſon for which was this: The very next Year after the hard Froſt of 1739, there was a Famine; that raiſed the Price of this Grain to ſix Shillings a Buſhel in *Hemſted* Market: But this Price did not ſatisfy many Farmers. On the contrary, it infatuated them with ſuch aſpiring Notions of Covetouſneſs, as to deter Thouſands from ſelling their Wheat even at this large Rate; and thereby ſo enhanced the Price of it, as to cauſe it to be ſold, in ſome Markets, in 1740, for eight Shillings a Buſhel. In our Pariſh of *Little Gaddeſden*, two Farmers ſold their Wheat in 1740 for ſix Shillings a Buſhel, as well as myſelf: But they believing, or rather hoping, it would riſe to ten Shillings a Buſhel, deſiſted ſelling any more; but, inſtead of graſping that Sum, they, at laſt, were obliged to ſell it for three Shillings a Buſhel: For, as many Farmers were of their Mind, they ſold no more of their Wheat than what mere Neceſſity forced them to, till the Year 1742, when the lower Country, or Vale Farmers, had done ſowing their Lent-grain, there were ſo many Waggon-loads of Wheat brought up on the ſaid 16th Day of *April*, to *Hemſted* Market, that the beſt Wheat was ſold for no more than——Shillings a Buſhel. But our two *Gaddeſden* Farmers came worſe off; for they kept their Wheat in Sacks, till it was very much damaged, by reaſon it was a little

dampiſh when firſt put into them; and, therefore, were obliged to ſell it for three Shillings a Buſhel, on the ſame 16th Day of *April* 1742.

How a Perſon kept Wheat ſound ſeveral Years to Profit.——A Perſon living near *Tring* in *Hertfordſhire* kept above fifteen hundred Buſhels of Wheat in Bins, without ſtirring it; and it is reported, that it kept free of the Wevil five or ſix Years: But, though it may be ſaid to have kept ſound all that Time, yet it had a Tang on taſting. Another Perſon, who lived about ſix Miles Diſtance from him, is ſaid to have kept Wheat in Bins three or four Years, till the Skin of it appeared to be Part off; for the Flour of the Corn feeds on the Skin, as the Inſide of an Orange, or Lemon, does on its Rind. This Wheat was ground, and made not only a great deal of Flour, but of the fineſt, ſofteſt, and beſt Sort; ſo that they who bought of it once, would have more. Wheat, kept thus ſound, ground very ſhort, running moſtly into Flour, becauſe it had but little Bran; for when Wheat is laid up, thoroughly cured, the Salts, contained in it, have Power to ferment a little, and act free, and unmoleſted by too much Moiſture; and thus feed on the Skin of the Wheat, while the Flour remains ſweet, ſhort, and fine.

How an old Farmer preſerved his Wheat in Sacks.——An old Farmer, who occupied a very ſmall Farm, to get his Wheat dry, and preſerve it ſo, took this Method, for want of Bins: He put it in Sacks, and had them carried up into a Chamber, where he put a Stick into the Middle of each Sack, and run it down to the Bottom; then, every time his Wife baked, he took the Sticks out; and, after the Bread was drawn, he laid them in the Oven to dry: And this Cuſtom he continued till the Wheat was ſold; for, by thus drying the Sticks every

Baking-time, they abſorb'd the Humidity of the Wheat, and did it a great deal of Service.

A ſecond Caſe of the ſame.——The Harveſt 174 was attended with Rains, which occaſioned a great deal of damp Wheat. One of my Neighbours, who rented a ſmall Farm, took this Method to dry it: He put a Couple of Sacks at a time near the Fire, in order to dry the Wheat, and fit it for Market: To this Purpoſe, he put a Stick about the Thickneſs of a Mop or Broomſtick into each Sack, which, though forced, went down to the Bottom of the Sack with great Difficulty; for the Wheat was very damp, even to a clotted Degree. When a Sack had been a Month near the Fire, he ſhifted the Wheat into another Sack; and then the bottom Wheat became the uppermoſt, and the Stick went down pretty eaſy: And, by this Method, he got his Wheat into tolerable good Order. The beſt Way, therefore, for getting a ſmall Parcel of damp Wheat dry, is, firſt, to bake the Sack; next, to put in the damp Wheat; next, to put it near the Fire, and ſhift it into another Sack every Fortnight; and, laſt, to bake the Stick every time a freſh Sack is baked to ſhift the Wheat into.

Of a Farmer's keeping Wheat ſix Years in Sacks.—This Farmer lives about two Miles from me; and who about the Year —— ſold Wheat for ſix Shillings a Buſhel, that had been kept in Sacks ſix Years in a Loft at *Hemſted:* But, when he ſold this Wheat, it was in a damaged Condition; for the Wevils had eaten Part of the Kernels; and therefore he ſold it almoſt for half the Price of ſound Wheat, which, at that time, was ten Shillings a Buſhel. All the Sacks were rotted at Bottom, which obliged him to ſhift all the Wheat into others. This I am credibly informed of.

How

How a Perſon made it Part of his Livelihood to buy Wheat at one Market, and ſell it at another.—— This Perſon, at this time, lives near ———— in *Bedfordſhire*, where he rents a little Land; and what he gets by that, and by buying of Wheat at one Market, and ſelling it another, he makes a ſhift to maintain his Family. Now the Method he takes to buy and manage his Wheat, is this: He goes to *Bedford* Market, that lies about twelve Miles diſtant from him; and there, about *Chriſtmas-time*, when Wheat is generally threſhed out in froſty Weather, and when the Farmers Teams of this Country can't carry it to Markets nearer *London*, by reaſon of the Badneſs of their clayey miry Roads; he then buys the right large fine red *Lammas* Wheat; for here, I believe I may ſay, is ſold the beſt of this Sort; becauſe in this County, *Northampton*, and *Leiceſterſhire*, is the richeſt Wheat-land thought to be in *England*. Here he buys this Wheat almoſt as big as Cherry-ſtones, and lays it up in a Loft, or Granary, in Sacks, till the next Spring: Then, when theſe ſloughy Roads are got dry, he fetches it home, and lays his Sacks of Wheat in a Chamber of his Houſe; obſerving, once in five or ſix Months time, to take all the Wheat out, and ſcreen it, to free it from Duſt, and keep it ſweet: Then he puts it up again into the ſame Sacks; and, when it is dry ſunſhiny Weather, he opens the Mouth of each Sack, and likewiſe his Windows, for the Wheat to have the Benefit of the Air; but, when it is foul Weather, he ties up his Sacks, and ſhuts his Windows; now-and-then turning them Bottom upwards, for the Kernels to lie in a contrary Poſition to what they did before; which adds much to the keeping Wheat from heating, and preventing the Breed of Wevils. Thus this Man once kept a Parcel of red *Lammas* Wheat, that he bought in *Bedford* Market, in Sacks, ſix Years, perfectly

perfectly ſound, till he ſold it at *Hemſted*, in the Year 1737, for near five Shillings a Buſhel, when others ſold their old Wheat for only four Shillings a Buſhel. Not that this is his conſtant Practice, to buy Wheat for keeping it ſo many Years; this was only a particular Fancy; for his uſual Way was to buy and ſell the ſame Wheat every Year; unleſs an extraordinary Proſpect tempted him to the contrary.

How ſeveral Landlords encourage their Tenants to forbear ſelling their Wheat, and keep it againſt a riſing Market.——This, I believe I may ſay, is much more in Practice in the lower or Northern Counties of *England*, than in the Southern Parts: For, as Gentlemen live more remote from *London*, I preſume they live the cheaper; and, conſequently, are better enabled to give their Tenants larger Credit than thoſe that live at a greater Charge, near the expenſive great Metropolis. This is obvious to me, not only from the Sight of thoſe many Ricks, Stacks, Mows, and Cocks of Corn that are to be ſeen downwards, more than in our Up-country; but alſo from the many Relations I meet with from Tenants who enjoy ſuch noble Landlords, that forbear taking their Rents two or three Years together, purely on account of giving their Tenants a Chance of the beſt Market: And this Favour they the more ſecurely grant them, as they are Eye-witneſſes of the Stock of Grain remaining on their Premiſes, ſufficient for paying them all their Rent. And this kind Uſage has often happened to the Intereſt of the Tenant, when the very Surplus-money of a raiſed Market has paid two or three Years clear Rent off; that is, that the high Price of a third Year's riſing Market has been ſo much above the Price Wheat was at for two Years before, that it has paid three Years Rent: Precedents that I hardly ever meet with in the Southern, but

but often in the Northern Parts! For there are great Numbers of Waggon-loads of Wheat drawn to *Hemſted* Market in the Spring and Summer-ſeaſon, out of *Buckinghamſhire*, *Bedfordſhire*, *Northamptonſhire*, and *Leiceſterſhire*: And, as I ſell all my Grain at the ſame Market, I have frequent Opportunities to hear of theſe generous Landlords, and vigilant Tenants.

Of Traunters buying Wheat to ſell again; and of Tenants, who, by their own Ability, keep their Wheat for a riſing Market.——The Word *Traunter*, for aught I know, is more particularly uſed in *Hertfordſhire* than elſewhere; for I hardly ever heard it mentioned in any other of the Southern Counties. The Word *Traunter* I take to mean, ſtrictly, any Perſon that buys Wheat in Sacks, to ſell again in Sacks: And this many do in our Parts; chiefly, Gentlemen, Farmers, and Tradeſmen. A Gentleman, in *June* and *July* 1744, that did not underſtand the Matter himſelf, nor cared to be ſeen in it, employed a Perſon that did, to lay out as much of his Money in Wheat, as amounted to five hundred Pounds. Accordingly, he hired Lofts, or Granaries, near the Market-town, to keep it in, believing he then bought this Grain at a moſt low Price, even for leſs than three Shillings a Buſhel: And, as Wheat was never known to be drier, nor in better Order, there is no Reaſon to doubt, but that it will, upon Occaſion, keep ſound ſeveral Years. There are alſo ſome Farmers that follow this Buſineſs; and are tempted to do it, chiefly from the great Conveniency they enjoy, in having Teams of their own for drawing Wheat from one Market to another, for employing their Leiſure-times. I have ſeen this Piece of Huſbandry performed by ſeveral Farmers, who, living between *Leighton* in *Bedfordſhire*, and *Hemſted* in *Hertfordſhire*,

ſhire, that are two Markets twelve Miles aſunder, they buy it at the former to ſell it at the latter; and this they do in one and the ſame Week, as one is on a *Tueſday*, and the other on a *Thurſday*; and, perhaps, get as much as will pay Time and Carriage, and ſometimes not; at other times they keep the Wheat for a riſing Market. Next to theſe, are Gentlemens and Farmers Servants, who, ſaving ſome Money in their Services, venture it this Way, and lay it up in Lofts, in hopes to get an Increaſe: But, for theſe three Years laſt paſt, moſt, or all, that have traded this Way, have been Loſers, becauſe Wheat has been falling from the great Price of ſix, ſeven, and eight Shillings a Buſhel, ſince the Year 1740 to this of 1744. But, for following ſuch Traunting Buſineſs, the Law requires the Qualification of a Licence, to be had of the Clerk of the Peace of each County. There is a Farmer, at this Time living near *Buntingford* in *Hertfordſhire*, that has not ſold any of his Wheat for theſe three Years laſt paſt; becauſe he keeps it in Mows abroad, and in Sacks at home, againſt a riſing Market, occaſioned by a wet Harveſt, or otherwiſe: And this he does from his own Ability of Pocket, that enables him to keep ſuch a dead Stock ſo many Years, upon a Lottery of gaining or loſing.

An Account of a Perſon dying worth about forty thouſand Pounds, the greateſt Part whereof was acquired by his drying Wheat, and keeping it ſound, to ſell at an advanced Price.——This Account I take *verbatim* from Mr. *Tull*'s Works, who ſays, that "The mean Price of Wheat, betwixt dear and "cheap, is reckoned five Shillings a Buſhel: 'Tis "commonly ſaid, that a Farmer cannot thrive, "who, for want of Money, is obliged to ſell his "Wheat under five Shillings a Buſhel; but, if "he will ſell it dear, he muſt keep it when it is "cheap:

" cheap: And his [meaning the Farmer's] Way " of keeping it, is in the Straw; uſing his beſt " Contrivances to preſerve it from the Mice. " But," ſays he, " the moſt ſecure Way of keeping " a great Quantity of Wheat, that ever I heard " of, is by drying of it. When I lived in *Ox-* " *fordſhire*, one of my neareſt Neighbours was " very expert in this, having practiſed it for great " Part of his Life. When Wheat was under three " Shillings a Buſhel, he bought, in the Market, " as much of the middling Sort of Wheat as his " Money would reach to purchaſe. He has often " told me, that his Method was to dry it upon a " Hair-cloth, in a Malt-kiln, with no other Fuel " than clean Wheat-ſtraw, never ſuffering it to " have any ſtronger Heat than that of the Sun. " The longeſt Time he ever let it remain in this " Heat, was twelve Hours; and the ſhorteſt Time, " about four Hours: The damper the Wheat was, " and the longer intended to be kept, the more " Drying it requires: But, how to diſtinguiſh " nicely the Degrees of Dampneſs, and the Num- " ber of Hours proper for its Continuance upon " the Kiln, he ſaid was an Art impoſſible to be " learnt by any other Means than by Practice. " About three or four-and-twenty Years ago, Wheat " being at twelve Shillings a Buſhel, he had in his " Granaries, as I was informed, five thouſand " Quarters of dry'd Wheat, none of which coſt " him above three Shillings a Buſhel.

" The dry'd Wheat was eſteemed, by the *London* " Bakers, to work better than any new Wheat " that the Markets afforded. His Speculation, " which put him upon this Project, was, that " it was only the ſuperfluous Moiſture of the Grain " that cauſed its Corruption, and made it liable to " be eaten by the Wevil; and that, when this " Moiſture was dried out, it might be kept ſweet

" and good for many Years: And that the Effect " of all that Heat of the ſame Degree was the " ſame, whether of the Straw or of the Sun."

As a Proof, he would ſhew, That every Grain of his Wheat would grow after being kept ſeven Years.

He was a moſt ſincere honeſt Yeoman, who from a ſmall Subſtance he began with, left behind him about forty thouſand Pounds; the greateſt Part whereof was acquired by this Drying Method.

By this Time I think I have been long enough on the Subject of buying and preſerving Wheat; and therefore ſhall poſtpone what I have further to ſay on this Matter, to another Month's Works, wherein I intend to finiſh this ſerviceable Account, by writing on the ſeveral following Articles; *viz.*

Firſt, How a Perſon may know how to buy a a right Sort of Wheat, in a true Condition, for laying it up in a cheap Time, to make a Profit of it in a dear Time.——Or take it this way—The Criterions or true Marks whereby a Perſon may know the great Secret how to buy that Sort of Wheat which is moſt fitting to lay up for obtaining an advanc'd Price.

Secondly, Several Reaſons why ſome Perſons believe Wheat keeps better in Sacks than in a looſe Heap.

Thirdly, How to manage Wheat, dry'd in Sacks by a Fire-ſide, to Advantage.

Fourthly, How to keep Wheat dry, tho' kept on a Ground-floor.

Fifthly, The Method made uſe of at *Paris*, to keep Wheat ſweet and ſound.

Sixthly, How Wheat has been preſerved ſound at Sea in long Voyages.

Seventhly, Three ſeveral ways of drying Wheat in the ſweeteſt manner: Being Three Secrets of very

very high Importance, that were never before publiſhed by any Author whatſoever; and which, if duly regarded and practiſed, will effectually prevent thouſands of Quarters of Wheat being damaged, as thouſands have been in a greater or leſſer Degree, for want of knowing ſuch Ways. In the Year — a Gentleman laid up Wheat to ſell for a riſing Market, that was a little dampiſh, expecting a Sale for it in a little Time: But it happen'd otherwiſe; and though he kept it in Lofts, not quite a Year and a half, it was ſo much damaged, that he gave his Hogs, it was thought, near eighty Quarters of it: An Example, one would think, ſufficient to deter others from falling into the like Miſtake; and the rather, ſince a Cure or Prevention of ſuch a Misfortune may by theſe Means be moſt cheaply and readily attained.

And now, as I have been writing of preſerving Wheat by ſeveral Methods practiſed in ours and other Countries, I ſhall proceed in the next Place to give an Account of the famous Doctor *Hales*'s Brimſtone-way of preventing Corn being corrupted by Wevil, *&c.* in Granaries; or if it is, how to cure it. To this Purpoſe, and that I may publiſh this Matter in the plaineſt manner, I ſhall here tranſcribe the Doctor's whole Directions on this Subject; which, though it interferes with ſome other Things than Corn; yet to illuſtrate this important Article the better, I ſhall, as I ſaid, write the whole Directions he gives on this Account, as follows; *viz.*

CHAP. XV.

Directions to preſerve Corn in Granaries, &c. from being eaten by Wevils, Maggots, or Worms.

THERE is another great Inconvenience, to which Sea-faring Perſons are frequently expoſed, by having their Proviſion of Biſcuit and Corn much ſpoiled by being eaten by Worms, Maggots, or Wevils, eſpecially in long Voyages; which Inconvenience might probably be in a great meaſure prevented, by the following Means; *viz.*

It is well known, that the Fumes of burning Brimſtone are moſt deſtructive of animal Life; and will therefore not only deſtroy living Animals, but will alſo prevent the Growth of them in Bread or Corn, which is pack'd up in cloſe Veſſels, in which the Air is ſtrongly impregnated with theſe Fumes; which, it is well known by repeated Experience, have a Power of deſtroying or reducing to a fixt unaereal State, the more wholſome vital Part of the Air.

Having therefore filled the Casks with Bread or Corn, or any other vegetable Subſtance, which is liable to be worm-eaten; bore ſix or eight Holes in one Head of the Casks, and two Holes in the other Head, more or leſs, as Experience will prove to be beſt, all of them about the Size of common Quart corks.

And that the Corn may not drop through theſe Holes, nor the Bread ſtop them up, it will be convenient to nail within-ſide of each Head of the Casks, three or four Sticks, about an Inch thick: Theſe Sticks having a Piece of Hair-cloth, or very coarſe Sack-cloth laid on them, will prevent the Falling through of the Corn; and yet give room for the Fumes

Fumes of the burning Brimſtone to aſcend; and the Sticks, without a Hair-cloth, will prevent the Biſcuit from immediately covering the Holes.

Having therefore provided a ſufficient Quantity of Pieces of Tow, or linen Rags, dipped in melted Brimſtone; if the Casks are to be fumed on Shore, then, having dug a Hole in the Ground, about a Yard deep, and eighteen Inches wide; throw into the Hole, more or leſs, as Experience will ſhew beſt, about a Quarter of a Pound of the brimſton'd Tow or Rags, ſet on Fire; immediately placing over the Hole, the Cask, with that End which has the moſt Holes in it, undermoſt, for the Fumes to aſcend through them, into the Cask; which yet they would not do, if there were ſome Holes in the Upper-head of the Cask, to give Vent for the Air to aſcend through.

When you gueſs the Brimſtone is burnt out, and that the Cask is full of Fumes all over (which it will be, when they have aſcended for ſome time through the upper Holes), then drive Corks into the upper Holes; and, turning the Cask ſideways, on its Bouge, immediately cork up the lower Holes. The tighter the Cask is, the better and the longer it will keep the Fumes in, and prevent the Entrance of freſh Air, which would promote the Breeding of Inſects.

But if by reaſon of the too great Cloſeneſs of the Hole in the Earth, it ſhall by Experience be found, that the great Smother of the Fume extinguiſhes the burning Brimſtone; then a leſs deep Hole may be made uſe of, on which a Cask may be ſet, with both its Heads out; the Bread or Corn-cask being ſet on this at ſuch a Height from the burning Brimſtone, as to prevent the Bread or Corn being ſcorch'd by it; for which Purpoſe about a Yard will be high enough: If need require, there may be two or three Holes bored in the Sides of the head-

headleſs Under-cask, or ſome Space left at the Bottom, in the Earth, to give Vent enough to keep the Brimſtone burning.

'Tis probable that by this means Biſcuit, Corn, *&c.* may be long preſerved from being worm-eaten: But in caſe it ſhall by Experience be found needful to renew this Fumigation, eſpecially in ſome long Voyages; it may be done with great Safety on Shipboard, in calm Weather; *viz.* by placing a Cask on Deck, with its upper Head out; in the Bottom of which let there be near a Foot Depth of Ballaſt, preſſed hard down, with a kind of hollow Baſon in the Middle, wherein to lay the burning Brimſtone.

Not only Bread and Corn-casks may be thus fumed again, if need require; but alſo the Bread in the Bread-room, if infected with Wevils or Worms, may, by being thus fumed in Casks, have all the Vermin deſtroyed; which will conduce much to the Preſervation of the Bread, by leſſening their Number, though they cannot be thus wholly extirpated, becauſe the Bread-room itſelf cannot well be fumed at Sea, while the Ship is full of People; though it may be ſafely done when in Harbour, by burning then ſome Brimſtone in it, on a thick Bed of Ballaſt, in a ſhallow open Tub; which would for a long time preſerve the Room from being infected with this Vermin.

I am told, that it is by ſome ſuch Means that all the Rats in Ships are deſtroy'd, when in Harbour: But I muſt again and again caution againſt uſing any Fumes of burning Brimſtone under Deck while any Perſons are there; for they will inſtantly be ſuffocated, before they are aware of it.

When the Wevils are got into the Malt or Corn in a Granary, they might eaſily be deſtroy'd, by putting the wevily Corn into Casks, or Cheſts, or large Caſes made of Boards; which being placed over Holes in the Ground, with burning Brimſtone

in

in them, would ſoon deſtroy all living Animals in the Corn; and a great deal of Corn may be thus cured of Wevils, *&c.* in a little time.

The Wevils, in a Granary full of Corn, may alſo be deſtroy'd in the following manner; *viz.* Let there be many Holes bored in the Boards of the Granary, of ſuch a Size that the Corn cannot fall through; or elſe let there be in ſeveral Parts of the Floor large Holes, covered with Laths, on which Hair-cloths are to be laid, as in Malt-kilns: And having provided a large Quantity of Tow dipp'd in melted Brimſtone; if the Ground-floor of the Granary be of Earth, lay ſeveral Heaps of this brimſtoned Tow, as big as a Man's Head, in the Proportion of about four Heaps to every twelve Feet ſquare, taking care not to place them near the Walls. But if the lower Floor be covered with Boards, then lay the Parcels of Brimſtone on Heaps of Sand or Earth, eight or twelve Inches thick, and laid on Tiles or Bricks, and hard preſs'd down, to prevent the melted Brimſtone's getting thro' it; and, for greater Security, I uſed to put the Earth into common Waſh-tubs. If the Floor on which the Corn lies, be ſix Feet diſtant above the burning Brimſtone, there will be no Danger of its catching Fire; yet for fear of Miſchief, great Care muſt be taken. All Doors and Windows muſt be cloſed as much as poſſible. If there are ſeveral Granaries over one another, the Fumes will paſs through all with great Velocity and Acrimony.

The Fumes of burning Brimſtone placed thus under the Corn, will aſcend through it with great Velocity and Acrimony: But if the burning Brimſtone is placed above the Corn, tho' confined in a cloſe Place, the Fumes will not then deſcend into the Corn, as I have found by Experience, having put in a Muſlin Rag Ants, at the Bottom of ſuch fumed Corn; but they were not killed thereby.

I have fumed whole Malt thus very ſtrongly; and then, being ground, brew'd with it. It gave no Taſte to Beer, that I could perceive: The probable Effect of fuming it will be, that it may prevent the Beer's working too faſt; for this is well known to be the Effect of ſuch Fumes on Wine and Cyder.

I fumed thus alſo ſome Sea Biſcuit, Peas and Wheat, in a large Glaſs Veſſel; which was repeated again after ten Days, yet they had no ill Taſte; and, expoſing them for ſome time to the open Air, would probably free them from the very little Taſte it gives. I ſowed the Peas, which grew; ſo that the vegetative Quality of them was not ſpoiled: But the vegetative Quality of the Wheat was thereby wholly deſtroy'd, for none of it grew, tho' ſown three ſeveral times, at ſome Weeks diſtance. It will not therefore be adviſable to fume Corn thus, which is intended to be ſown; though it will probably prove an effectual Means to preſerve Corn that is to be eaten; which will be of great Uſe, eſpecially in hot Climates, where I am informed, that the Corn is in great Quantities ſpoiled by this Vermin.

When the Wevil, *&c.* have got into a Cask of Bread or Corn, there is no doubt but that ſuch Fuming will deſtroy them; but it is doubtful whether their Eggs will thereby be ſpoiled: If therefore on Experience it ſhall be found, that young ones are hatched from thoſe fumed Eggs, in ſome little Time; then if theſe laſt hatched Wevils are deſtroy'd by another Fumigation, before they live long enough to lay Eggs; this will be a Means to prevent their Increaſe for a long Time. But I think it probable, that if the fumed Casks are ſo cloſe as to admit no freſh Air, the Eggs will ſcarcely hatch; or if they do, that the very tender young ones cannot live and thrive in ſuch an Air.

Since

Since the vegetative Quantity of Wheat is deſtroy'd by the Fumes of burning Brimſtone, a Hint may hence be taken for an Improvement in makeing of Malt; *viz.* By thus deſtroying the vegetative Power of Barley (which may probably be done by laying it on the Kiln, and burning a good Quantity of Brimſtone under it, for half an Hour, or an Hour), the Fumes of which will aſcend through it, tho' laid to any Degree of Thickneſs. And if they ſhall be found to have the ſame Effect on Barley, as on the Wheat, then the Root of the Barley will not ſhoot, and conſequently ſo much leſs of the Subſtance of the Grain will be exhauſted in Malting; on which Account the Malt will be proportionably better. This may be firſt tried by fuming only a Handful of Barley well; and then ſeeing if it will grow when ſown in the Earth, or put in Water. Great care muſt be taken, not to come near the Upper-part of the Kiln, while the Brimſtone is burning, leſt they ſhould be inſtantly ſuffocated. —*Philoſophical Experiments*, Page 69.

CHAP. XVI.

Of Bees.

THE Hertfordſhire *way of hiving Bees.* —— We firſt prepare a Hive made with Straw, by rubbing all the Inſide with ſugar'd Small-beer; and then we fix three Sticks in one Part of the Hive, for lodging the Combs. The Hive being thus prepar'd, in the next Place the Man prepares himſelf, by having a Piece of Crape, or ſome ſuch Thing that he can ſee through, faſtened about his Head, in ſuch a manner that the Bees can't come at any Part of it to ſting him. When this is done, he

puts a Pair of Gloves on, and thus is equipp'd for Action. Now in caſe a Swarm of Bees ſettles on the Bough of a Tree, as they commonly do where Trees are near; I ſay, in this caſe he rears a Ladder, and aſcends it, with a Hive in his Left Hand; and when he has with his Right Hand ſhaked the Lump or Swarm of Bees into the Hive, he immediately, with a Woman's Apron (that was firſt tied about the Hive), covers all the Bees in it, and deſcends the Ladder. Then he takes away the Apron, and claps the Hive on the Ground under the Tree, laying two Bits of Sticks under the Forepart of the Hive, to raiſe it a little hollow, for giving the Bees a free Paſſage in and out of the ſame. But for all that, ſome will ſettle in a Bunch, and be there till a ſecond Attempt is made by the Man's going up the Ladder a ſecond time, and with another empty Hive take them down as before. Then he claps this Hive juſt before the Mouth of that on the Ground, and the Bees readily go into it; ſo that by Night all are ſettled, for being carried to the Place of their Winter Reſidence. Bees have been hived three times in one Day, and yet flew away. A Swarm roſe on the 15th Day of *June* 1744. at *Gaddeſden*, and ſettled on a Hedge; and tho' hived twice, they could not get them all in to ſtay that Night. Next Morning there were found ſome in the Hive; but they, and the reſt that were abroad, all took a Flight to *Ivinghoe* Common, near half a Mile off the Place of their firſt Riſing; and being followed, were found ſettled there on a Furze-buſh, where they were watch'd by Children all the 16th Day; and on the 17th were all ſafely hived, and brought home—Another Swarm at *Gaddeſden* roſe in *May* 1744. that were well hived; and in a Fortnight after a Colt roſe from the ſame old Stock of Bees, and flew about as if they would ſettle, but did not, becauſe the Wind was too cold;

and returned to their Hive: However, next Day they roſe again, ſettled on a Hedge, and were hived. Bees will ſometimes (but rarely) ſwarm, caſt, colt, and ſpew, from one and the ſame old Stock of Bees in one Summer. The Swarm, being the firſt, ſtands; the Caſt ſeldom does; and the Colt and Spew never. The Caſt, if the Weather is fine, has happen'd in eight Days time after the Swarm; the Colt in five Days after that; and the Spew in three more. The Caſt, the Colt, and the Spews Honey is generally taken up about *Bartholomew-tide*, when the Bloſſoms of all Things vegetable are moſtly over; and the Nights now being longer and colder, the Bees of all ſorts begin to live on their gather'd Honey; which to prevent, they kill all thoſe about this Time that they deſign ſhall not live, and take their Honey; and for the better Conveniency of doing this, the Colt and Spew (when this great Increaſe happens) are commonly put into one Hive at a Night-time.—Driving of Bees is look'd upon by ſome to be very hazardous, and therefore ſeldom practis'd by them, becauſe if they have not Time enough, and a favourable Opportunity to get Honey enough for a Winter Store, they will turn Robbers, and fight other Bees, to get their Honey; by which many Bees are killed, and Hives emptied to fill theirs.

How pernicious Tobacco-ſpittle and other Naſtineſs, is to Bees.—A Man in our Parts hived a Swarm of Bees in a new Hive; and though they ſtay'd three Days in it, and had begun making their Combs, yet they all flew away and forſook it; ſuppos'd to have ſome Tobacco-ſpittle caſt on ſome Part of it: For it is well known to many, that Bees hate Tobacco ſo much, that if a Perſon has a lighted Pipe of it in his Mouth, he may hive them without Danger. But this Item ought to extend itſelf further than only Tobacco; for Bees are one of the

moſt ſenſible and cleanlieſt Inſects that live. They hate the very rough Inſide of a Hive, ill Scents, or any other Naſtineſs near them: For as ſoon as they are hived, they fall to work, and bite off every little thing in their Power, that may prove an Annoyance to their future Enjoyment, and clean the Hive in an exquiſite manner. But for giving a further Proof of this their cleanly Nature, it is common for the good Houſewives, as ſoon as they have kill'd an old Stock, or Swarm, or Caſt of Bees, and taken out their Honey, to put the empty Hive on the Ground near other Hives of Bees, for them to clear it of all the droſſy Wax and Honey that remains and ſticks on it: And this they'll do beyoud the Art of Man, for the ſake of collecting the Wax and Honey they get here, and carrying it to their own Hives. And though it may be here objected, that the Smoak of the Brimſtone which was made uſe of to kill the laſt Bees, is of ſuch a poiſonous and diſagreeable nature to theſe Animals, that it may be thought an Antidote to their comeing near the old Hive; yet by keeping the Hive a Day or two in the Houſe, and afterwards expoſing the ſame to the open Air, the Smell of the Brimſtone-ſmoak is taken away, and proves no Impediment to the Bees thus labouring to take away the Wax and Honey that remain'd cleaved to the Hive. When then the Hive is thus clean'd, the Houſewives take and ſet it by as a ready prepar'd one againſt another Year.

Why a found Swarm of Bees ſeldom proves ſucceſsful to the Finder or Owner of them.——A found Swarm ſeldom ſtands good long, becauſe it has been obſerved, that the greateſt Part of ſuch Swarms turn Robbers of others. And if they do behave themſelves well the firſt Seaſon, they are apt the next to fly away when they ſwarm or caſt, becauſe if they happen at firſt to be of that ſort which ſwarm'd

from

from Stocks in Trees, or in Cielings of Houſes, the Reſidence of a Hive is unnatural to them. My next Neighbour in 1742. had a Swarm of Bees ſettled on his Hedge in a Field adjoining to one of mine, which he hived in good Order, but to no Purpoſe; for though this Chance-ſwarm was, as he thought, ſecured at Night, when he came to fetch them away, there was not one left in the Hive; nor is it to be expected, unleſs it be thoſe ſort that ſtraggled from a Hive; for there are many Swarms of Bees that take to build their Combs in hollow Trees, or Cielings of Houſes. I took a great deal of Honey once out of a hollow Tree that grew in my Hedge, after ſuffocating the Bees with Brimſtone.

How to make a Chance-ſwarm of Bees prove ſucceſsful to the Owner.——To naturalize theſe ſort of Savages, the way practis'd in our Country is, to ſet them, when hived, in a Place by themſelves, at ſome Diſtance from the other Bees: for when theſe have been ſo ſerved, ſome have done very well; and this, becauſe ſuch Bees have been uſed to live free from the Company of all others, except their own Company; which makes them in courſe treat the Hive ſort as Enemies: And remember, that all that keep Bees, ſhould love them; for theſe hate thoſe that hate them. A Farmer's Wife loved them much, but her Husband hated them: They would ſting him, but not her. If the Bees ſwarm low, it is a bad Sign; if high, a good one.

Doctor Warder's *Way of hiving Bees.*——In my laſt monthly Book of *Agriculture Improved*, for the Month of *May*, I have wrote the Reverend Mr. *Thorley*'s Account of the Swarming and Hiving of Bees: And now, for illuſtrating this moſt ſerviceable Subject in the beſt manner I am capable of, I ſhall here likewiſe publiſh, *verbatim*, Dr. *Warder*'s Account of the ſame, that my Reader may have his Judgment the more amply inform'd; for I take this

this Article of hiving Bees to be the moſt material one of all others relating to this wonderful Inſect; and therefore the Doctor has been very particular and circumſtantial in writing on the ſame, Page 76. where he begins his Chapter thus———

Of Swarming, and the Reaſon why; and Hiving the Swarm.—The two Swarming Months generally are *May* and *June*, though there are ſometimes Swarms in *April*, and very often in *July*. Thoſe in *April* are in great Danger (if cold Weather ſhould follow their Swarming) to be ſtarved, before they get any thing to begin Houſekeeping withal. Thoſe that ſwarm in *July*, though they are in no Danger of ſudden Want, Honey-gathering being then plenty every where; yet they are in great Danger in the Winter following, for fear, leſt having ſo ſhort a Summer of it, they ſhould not have gathered Honey enough to ſerve them till next Spring.

The Reaſon of their Swarming is for want of Room in the Hive; for when they have bred ſo many that the Hive will not contain them, then, after they have lain out a while in a large Bunch at the Mouth of the Hive, in a fine warm Day generally they ſwarm: But as there is no general Rule without an Exception, ſo here you will ſometimes find they will not ſwarm, though they are very full, and lie out with a Bunch of Bees at the Mouth of the Hive, as big as your Head; and this they do for a Month together, though the Weather prove never ſo favourable, and will not ſwarm: The Reaſon is, there is no Prince ready to go forth with the Swarm; ſome Accident or other hath happened to the royal Brood within; and they will rather never ſwarm at all, than go off without their beloved Governeſs.

The beſt Time for hiving your Swarm is directly after the moſt of them are pitch'd; and this way

way commonly prevents their flying away; for you must note, that the Bees are always provided of a Place which they design for a Habitation before they swarm, either in some hollow Tree, or in the hollow Part of some old Building, or in some Hive, perhaps a Mile or two distant from you, where other Bees have died, and left their Combs; which the Swarm have already provided, by clearing out all the Filth of the dead Bees, or whatever else may be offensive to their cleanly Nature; and they only pitch on the Tree near you, to gather all together, that they may go away together to their prepared House. I have had a strange Swarm of Bees come into my Garden, and fly directly into a Hive of old Combs, which they had been every Day at work upon, to cleanse and make fit for them, for fourteen Days before, every Day about an hundred or more hard at work, pulling out and clearing the Hive of dead Bodies of Bees, old Sandarach, and Moths; and when quite clean, as I expected, the Swarm came, and went into their thus prepared House: But, however, though they always provide themselves of a House before they swarm, and take much Pains about it, yet if you are early enough in your taking the Swarm, and your Hive be clean, and not too old, they (finding themselves at unawares in a convenient House) have no mind generally to leave it, tho' sometimes they will, and give you a great deal of Trouble, and you will lose them at last: But if they rise again out of your Hive, either the same Day, or the next, as sometimes they will, and pitch again on a Tree near you; then be sure hive them not in the same Hive; for it is plain they had some Dislike of it.

The manner of taking them into your Hive is various, according to the Pitching of the Swarm. If your Swarm pitch upon a Tree that is pretty high, and be upon a single Bough, then the best

way

way to take them is, with a very ſharp Knife to cut off the Twig gently, elſe you will ſcatter the Bees; and lay it down on a Napkin under that very Tree they were cut from, or as near it as you can, and gently ſet your Hive over it; ſo will they undiſturb'd crawl up, and hive themſelves; ſo that you have nothing more to do, than in the Evening to remove them to their Place. But the general way of hiving them is, to hold the Hive under them, and ſhake them in; and having a Napkin, and a Stick to keep up one Side of the Hive, ſet them down on it; but let it be under the ſame Tree always, that the Bees that hanker about it (which they will always do, more or leſs) may be within hearing of the Swarm, and ſo go down to them; which they will naturally do: But if you ſet down the Swarm at any great Diſtance from the Place where they pitch'd, many will be loſt, or at leaſt return home again, which will be a Leſſening of the Swarm: But if the Swarm part, and pitch Part of them on one Tree, and Part on another (as ſometimes they will), that you may not be at a Loſs what to do in ſuch a Caſe, take the Directions following. Hive the two Parcels in two ſeveral Hives, and then let them ſtand within hearing of one another; and 'tis very likely that before Night comes, they will ſave you any further Trouble, by going all into that Hive where the Queen is: But if they do not, then about Ten o'Clock at Night proceed with them as in this and the following Pages ſhall be taught, how to join two ſmall Swarms into one.

I ſhall not dwell long on this Subject, becauſe almoſt every body doth already underſtand how to hive them, one way or other; and it matters not whether they are cut down or ſhaken into the Hive, if they ſtay quietly there; only this I muſt not omit to direct you about managing of the Caſts, or ſecond Swarms, which, as they are commonly ordered,

dered, come to little or no Profit. Now there is not, I think, ſcarcely one Caſt in twenty, that will gather Honey enough to keep them till the next Spring; ſo that they are generally taken up at Taking-time with the old Stocks; but they have ſo little Honey in them, that they turn to no Account. Now the way to make ſomething of them is thus (and pray believe me, for it will be to your great Advantage): Put two or three of theſe Caſts into one Hive, and ſo they will become a good Stock, perhaps as good as any of your other Swarms, and ſtand over the Year very well. The manner how to perform this ſeeming-difficult Work, is very eaſy when known, which here ſhall be faithfully taught: When you have a Caſt, or ſecond Swarm, take it into the Hive, as you do the Swarms, and put it in its Place: Then, perhaps two or three Days after, or a Week, you may have another Caſt, up and pitch'd; let this ſecond Caſt be hived by itſelf alſo in an empty Hive, and ſet under the Tree where it pitch'd, as before, till Night: Then you muſt put this ſecond Caſt to the firſt, thus: Spread a Napkin about ten a Clock at Night on the Ground, cloſe by the Stool of the firſt Caſt: Then lay a Stick croſs the Napkin: Then fetch your ſecond Caſt that ſwarm'd that Day, and with a ſtrong Stroke on the Stick which lies croſs the Napkin, knock out all the Bees, which come all out at that one Stroke upon the Napkin, in a broad Lump: Then throwing the Hive out of your Hand, take your firſt Caſt off from the Stool, and ſet over the Bees on the Napkin; ſo will they in about an Hour all crawl up, and become one Family: If any of them, as ſometimes they will, hang about the Outſides of the Hive, let them with a Wing be bruſh'd off upon the Napkin, and they will ſoon go to their Fellows: So about eleven or twelve o'Clock take up the Hive, and put it into its Place; ſo have you

two Casts in one Hive. In the same manner you may put a third, and a fourth; and so you may have a strong Hive of Bees for the next Year; for if they are in small Parcels, they can do no good; for out of so small a Parcel as one Cast, when all their Offices are provided for, there are so few to gather Honey, that little can be done; some must be appointed to keep the Brood warm, in order to breeding; some to keep Court with the Queen, some to keep Guard at the Mouth of the Hive, to keep away Thieves. But when, by this means of doubling the Casts, you have augmented your Numbers, they will have to spare, to supply every Occasion, and sufficient to gather Honey for the Family, stand all the Winter, and swarm the next Spring, as well as any of the other Stocks. The greater Quantity of Bees there are together, the better they are able to provide for themselves: My Meaning is, that one Peck of Bees, in one Hive, will get much more Honey than two Half-pecks will do in two Hives. The Reason why we put them together in the Evening, or so late, is, because by this means we prevent two great Inconveniencies: First, if it were in the Day, and they found such a Disturbance in the Hive, though the first Swarm that was at home, and had made some Works, would, it is probable, stand its Ground; yet, it is very likely, the second would rise again, and, perhaps, fly quite away; whereas, being in the Night, they cannot rise; but, all Night crawling one among another, they are united into one Monarchy, under one Queen; for they dispatch the Queen of the second Cast most commonly before the next Morning, and cast her out, though not always dead: Sometimes I have found her on the Ground alive, but never without her Guards about her, about two or three hundred, more or less, according to the Bigness of the Cast she belong'd to; which Guard *de Corps* never leave her

her till ſhe is dead: For though the whole Swarm is confuſed with the other; yet theſe, whoſe immediate Buſineſs it was, at that time, to guard their Sovereign, are ſo faithful in diſcharging that Truſt, that they venture their own Lives for her Safety: And, though on the Ground with their Queen in the Night, in Danger of being chill'd to Death; yet, to preſerve their Sovereign from Cold and Danger, they all cling ſo cloſe about her, that they ſeem to be one intire Creature: And it has been with ſome Difficulty that I have got them apart, to ſave the Bees, and put them to their Fellows; which you may eaſily do, when you have got away the Queen; but not before.

But, ſecondly, If you would put two Swarms, or Caſts, together in the Day-time, you will ſee the moſt dreadful Battle betwixt them that is poſſible to be conceiv'd, to the great Danger of both Swarms, or Caſts; for they will never give over fighting in the Hive, and out of the Hive, till one of the Queens is kill'd; and perhaps not then neither; for many of theſe ſmall Warriors will not preſently know, that the other Queen is dead; and ſo will keep on fighting to Death for their own Queen: For, till the Queen of the Hive comes to know it, and cauſe the Retreat to be ſounded in her Camp, there is no giving over fighting; but then, admitting all the Subjects of the ſlain Queen to Grace, they become one Family. But this great Hazard, Miſchief, and the Loſs of ſo many Bees as muſt fall in the Battle, is prevented by doing this Buſineſs at Night.

Many are the Ways that Country-people have of dreſſing the Hive, before they put the Bees into it; ſome with Strong-beer, others with Salt and Water, others with rubbing the Inſide of the Hive with Fennel; ſome with Baum: But the beſt Way, if you will do any thing to the Hive at all (for they

will like it well enough as it is, if it be clean), is to rub it very hard all over with a coarſe Cloth, to get off the looſe Straws, or any thing elſe that will come off with rubbing; and then, with a little Water and Honey, let the Hive be rubbed only in the upper Part, which may make them the more willing to aſcend. The Reaſon why you rub and cleanſe the Hive very well before you put the Swarm in it, is to ſave theſe cleanly Creatures a great deal of Labour; which, elſe, they muſt take to clean it. Nay, when you have done what you can for them this Way, they will have much Work to do, before they will think it fit for their Dwelling; as appears, if you take notice of the Place where the Hive ſtood with the Swarm on the Napkin the firſt Day; there you will ſee abundance of ſhort Bits of Straw, that ſtood out in their Way, gnaw'd off by the Bees with their Fangs: And, if you lay your Ear to the Hive any Time of the Night after they have ſwarm'd, you will hear them very buſy about this Work all Night long.

The Nature of Honey-dews, and of their Service to Bees.———In *Hertfordſhire* we ſay, when moſt Honey-dews fall, the Bees make the moſt Honey; and this it generally does in the greateſt Plenty in *June*, when Wheat is blooming; and then begins the Danger of what we call Striking, or, in plainer Terms, the Glutinizing of the green Ears by the Fall of this ſticking Body, or Honey-dew, which, when it falls often, and in great Plenty, it then becomes a favourable Year to Bee-maſters, but an indifferent one to Chelturne-farmers, whoſe Crops of Wheat grow in incloſed Fields, where Trees and Hedges break off the Force of Winds, and thereby deprive the Wheat of that Benefit which open Fields have; that is, the ſhaking off the Honey-dews as they fall, or afterwards before they dry on the Ears or Stalks, and ſo cloſe the tender green

green Kernels of Wheat, that they cannot inlarge their Growth, but remain till the laſt a thin lean-bodied Corn. But where the Wind has free Acceſs, this Miſchief is moſtly prevented. However, though this Dew, or heavenly Manna, is ſometimes hurtful to Corn, it never is ſo to Bees; on the contrary, it is their moſt nouriſhing Food; and when it falls in little Quantities, the Bees ſeldom proſper that Year; as was, I preſume, never more proved than by the late Seaſon 1743, when, notwithſtanding it was a very dry Summer and mild Winter, yet ſo few Honey-dews fell, that thouſands of Hives of Bees periſhed for want of Food. But for a more full Account of this Honey-dew, take Mr. *Thorley*'s Account of it as follows, *viz.*

What the Honey-dew is, is diſputed among the Learned. According to the Antients, it was an Efflux of Air; a Dew which fell upon Flowers.

The Moderns (ſays he) ſay it is rather a Perſpiration of the fineſt Particles of the Sap in Plants, which, evaporating through the Pores, afterwards condenſe upon the Flowers.

Pliny was much in the dark about it, and writes doubtfully of it, aſſerting, it was either the Sweat of Heaven, the Spittle of the Stars, or the Moiſture of the Air purging itſelf.

Doctor *Butler* judges it to be the Quinteſſence of all the Earth's Sweetneſs (*i. e.* of the Flowers) exhaled, or other Dews in Vapours, into the loweſt Region of the Air, by the continued and exceeding Heat of the Sun, and condenſed there.

And thence I have ſeen it very often deſcend in a clear Day, like an exceeding fine Rain; and eaſily diſcerned it againſt the Light of the Sun, for many Hours, if not a whole Day together. The Doctor's Reaſons are theſe:

When the Year is backward in its Fruits, the Honey-dews are the ſame.

In

In hotter more ſouthern Climates, where the Fruits and Flowers are moſt forward, theſe Dews are more timely: Alſo becauſe thoſe Countries, which have the greateſt Plenty of the beſt and ſweeteſt Flowers, have always the pureſt Honey.

And certain it is, that the hotteſt and drieſt Summers do produce the greateſt and moſt frequent Honey-dews; and in cold and wet Seaſons, few or none of them are to be ſeen.

It is the moſt generally received and prevailing Opinion, that theſe Honey-dews conſiſt of Vapours raiſed in the third Region; and, being thoroughly purged and digeſted by the Heat of the Sun, and condenſed, fall down to the Earth.

But as Plenty of Honey falls from above, ſo is there a native Sweetneſs in Plants, Flowers, *&c.* whence the Bees carefully and conſtantly gather it; and as they extract it from the Flowers, they do not (as ſome Writers affirm) defecate, concoct, and refine it: But as Nature produces it, they fill their little Bags with it, immediately tranſport it to their Hives, and diſcharge it into the Magazines; which done, they go back for more.

Much leſs do Bees make the Honey; though ſome tell us the Dew is not Honey, except it be gathered by the Bees, concocted in their Bodies, and condenſed by their Heat in the Combs.

And it is the Opinion of many Authors, that there is no material or ſubſtantial Difference between the Honey-dew, and the antient Manna of the *Iſraelites* in the Wilderneſs.

The Manna fell on the Ground, like hoary Froſt; was gathered early before the Sun waxed hot; and taſted like Wafers made with Honey; which ſhew ſome Similitude and Agreement betwixt them.

Honey was the Sugar of the Antients; and the *Romans* uſed it in their Feaſts.

CHAP.

CHAP. XVII.

Of the Service of the Drill-plough.

HOW ſerviceable the Drill-plough and Horſe-break is for improving Crops of Peas and Beans.—In Vales they generally ſow their Horſe-bean Seed promiſcuouſly in the broad-caſt Way; and then in their Rood, Half-acre, and Whole-acre Ridge-lands, with the Foot-plough. And if the Spring and Summer prove wettiſh, and the Hair-weed does not get their Maſter, the Vale-farmer generally comes off with very great Crops in their rich, black, ſtiffiſh Land. But when the Summer proves dry, and the Hair-weed takes them to a great degree, or the Black-fly makes its Lodgment on the Stalk and Bean-pod, they then generally have very poor Crops. Now, that theſe three Misfortunes may, in a great meaſure, be prevented, and the Vale-farmer almoſt depend on a plentiful Crop of Horſe-beans in dry Summers, let his Seed be ſown out of the Hopper of his three-wheel Drill-plough, in Drills at eighteen, one-and-twenty, or at four-and-twenty Inches Diſtance one from the other; and when his Horſe-beans are high enough in *May*, or Beginning of *June*, let him draw the new-invented Horſe-break between their Drill-rows, that has the late additional iron Improvement made to it, and it will clear the Intervals of all Weeds, and, at the ſame time, throw up and lay ſuch a quantity of Mould on the Bean-roots in a little Space of Time, as will ſhade and greatly nouriſh them, even beyond Dung. Here then appears the Proſpect of a very great Profit for little, very little, nay, even for a Trifle Charge, becauſe this Horſe-break Inſtrument, merely by its being fixed to the Carriage of the Drill-plough,

after

after the Plough is taken off from it, and drawn by two Horſes, will weed and dreſs three Acres of ſuch drilled Horſe-beans in one Day. But this great Profit does not end here; for it is well known to all Vale-farmers, and to many Chelturne-farmers, that a Crop of Wheat loves to ſucceed a Crop of Horſe-beans, and thrives better after them than Barley or Oats; which Benefit formerly induced all Vale-farmers to ſow no other Grain than Wheat or Horſe-beans, as thouſands do at this Day. But how much more has the Vale-farmer Reaſon to expect a good Crop of Wheat, when it immediately follows ſuch a Bean-crop, and this without ſtaying and loſing a Year's time to bring the Ground into a Tilth for Wheat! For a Wheat-crop, by this Drilling-huſbandry, may ſucceed a Bean-crop the very ſame Year: That is, Wheat may be ſown out of the Drill-plough in the Middle or vacant Interſpaces of the laſt Drills of Beans, which were kept clean, and, as it were, in a fallow Condition, on purpoſe for ſowing them thus with Wheat, about *Michaelmas*. And I have further to make known, that, by my former Writings on the Benefits of this Drill-huſbandry, many Gentlemen have been invited, and come into the Uſe of the Drill-plough, Horſe-break, *&c.* as the many Inſtruments I have, by Order, got made, and ſent away, and the Copies of their Letters, inſerted in my Monthly Books, make it appear. To which I add, that in my former Works I have given ſeveral Accounts how the excellent Three-wheel Drill-plough may be made uſe of, to great Profit, in different ſorts of dry Chelturne-ſoils. But now I give a new Account how this Plough may likewiſe be made uſe of in Vale Ridge-lands to great Advantage; and, indeed, it is like to be of happy Conſequence for Vale-farming, as well as Chelturne-farming, that this Inſtrument, and two others, have been in-

vented; becauſe by ſowing Wheat, Beans, Peas, *&c.* out of the Hopper of this Plough, the Ground lies in Drills at ſuch a proper Diſtance as to give room for the Horſe-break, *&c.* to work between them, and kill the Thiſtle, the Hair-weed, the Curlock, and all others that uſually infeſt Vale-grounds, which is what none of their Art or Labour could hitherto well effect; for all theſe Weeds have baffled their acuteſt Farmers Endeavours to deſtroy them intirely; and therefore thouſands of Acres of Corn in ſome Years, do what they could to hinder it, have been crippled by them; but by theſe Inſtruments they may be prevented at a moſt ſmall Charge. And now as a Gentleman, that I know, has introduced the Three-wheel Drill-plough into Uſe in a certain Vale, and ſown Wheat out of its Hopper in *October* 1743. in his low-ſituated, ſtiff, wettiſh, half-acre Ridge-lands, it is to be hoped more will follow his Example; for he had prodigious large Crops of Wheat, that grew in this manner in 1744. even ſo large as encouraged many to come to ſee them in the Field, from diſtant Parts; which Plough and Horſe-break, *&c.* I am ready to ſupply any Gentleman with, on a proper Order.

How a Gentleman, who lives on an Eſtate of his own, carries on his Farming Buſineſs without the Help of live Cattle, other than Horſes, Cows, and Hogs, for his Family Uſes. ——This ſeeming Paradox I ſhall make appear to be a plain Truth to a mean Capacity, by ſhewing that Wheat, and other Corn-crops, may be got for many Years together, without the Help of any Dung whatſoever; and this by means of ſowing Wheat-ſeed out of the Hopper of the Three-wheel Drill-plough, which this Utenſil will excellently well do, in a fine Tilth-earth in dry Weather, as it commonly is in the Month of *September* or *October.* And then a certain Gentleman, who is Owner and Occupier of a lean, gravelly,

loamy Soil, ſows his Wheat in the Middle of the Twelve-inch Interval, that lay in a clean, weeded, fine Condition, all the time the drill'd Wheat was growing in Drills, laſt Year, on each Side of the Interval; for this Space or Vacancy between the Rows of Wheat gave room for a certain little Inſtrument, that coſts but three Shillings, which we call a *Dutch* Hoe, to earth up the Mould in the Interſpaces to the Roots of the Wheat, that will vaſtly nouriſh it, even as much or better than Dung, and deſtroy all manner of Weeds beſides. With this Help, and with the Help of the fine Mould, that the Drill-plough leaves in the Poſture of a little Ridge on the Drill, as ſoon as the Wheat is dropt out of the Hopper of the Plough, the Land is made to produce as much or more Grain than uſually grows, where Wheat-ſeed has been ſown out of a Man's Hand in the broad-caſt way; and all this, I ſay, without the Help of Dung, or any Manure whatſoever: So that this Gentleman keeps no Sheep, nor Shepherd, becauſe the Drill-plough, Horſe-break, and *Dutch* Hoe, ſupplies them in great Perfection. And thus any Vale-farmer, that makes uſe of theſe Inſtruments, may be delivered from the Danger of rotting one or two Flocks of Store-ſheep in one Year, which I have known ſome ſuffer the Loſs of; for by this new Husbandry neither Chelturne nor Vale-farmer has any Occaſion to keep any Folding-ſheep at all, where their Lands lie incloſed. How happy a Conveniency, then, muſt this be to all thoſe Vale-farmers, and others, who have not Money to purchaſe another freſh Flock of Sheep in the room of the laſt Flock that was kill'd, or ſold for a Trifle, by means of a rotting wet Seaſon! But how much more happy muſt this Invention prove to thoſe who have little Money, and yet would take a large Farm! Surely, if the valuable Uſes of theſe three Inſtruments were

thorough-

thoroughly known, I ſhould think thouſands would ſell ſome of their Goods (if they cannot do it otherwiſe) to buy them; for by this means the Dung of Horſes, Cows, and Swine, may be laid on the Farmer's Meadow-ground, becauſe the plowed Ground will want none of it; ſo that all his Wheat, his Barley, his Horſe-beans, his Peas, and his Thetches, may be all ſown out of the Hopper of this Three-wheel Drill-plough, by ſhifting the little notch'd Box, or cut Roller, and making uſe of that particular one, ſuitable for ſowing this or that Seed. By this time I ſuppoſe my Reader will become ſo diffident, as hardly to credit what I have here advanced, becauſe it is a perfect new way of Farming, and what he may not have heard of before: Therefore, if I cannot give him better Satisfaction than a Theory-proof, I may, perhaps, as well whiſtle to the Wind as think to perſuade him to farm after this manner. To this I anſwer, That, for an inconteſtable Proof of this Matter, if any Gentleman or Farmer will pay me for my Journey, I will ſhew him ſeveral Places in Vale and Chelturne-countries, where he may ſee Corn and artificial Graſs grow in a very beautiful and prolifick Order, in Drills made by a Drill-plough. But there will naturally a Queſtion ariſe from what I here write; and that is, How can Land be made to produce great Crops of Corn, without Dung or Manure? To this I anſwer, That the little Ridge of fine looſe Earth, that lies on the Seed, will prove a ſufficient Dreſſing to the Corn, by the Salts that waſh down on the Seed out of this little Ridge of Earth; and the Dews beſide, that fall from time to time afterwards on the ſame, and likewiſe are waſh'd down to the Roots of the Corn. This is Nouriſhment enough, in the wetteſt or drieſt Seaſons, to force on its Growth; and the more, becauſe all the Earth is kept free and clear of Weeds:

And it is on this Account, that all Wheat growing in Drills is ſeldom damaged by Smut; for here is no Dung made uſe of to cauſe it: But the main Objection is to come yet; and that is, How can a Farmer pay his Rent, if he does not keep Sheep, and other live Cattle? It's true, that live Stock is one chief Part of a Farmer's Profit: But to overbalance this, I am here to repreſent the Advantages of Farming without it And they are, firſt; As I ſaid there is no live Cattle but Horſes required, and conſequently leſs Hazard of loſing Cows, Sheep, and Swine, by Diſeaſes. Secondly, The Charge of a Shepherd and Dairy-maid, and what we call an Odd Man, or one that is to ſet his Hand to any common Buſineſs, is ſaved; for in this Undertaking a Ploughman, a Ploughboy, and Taſker, are ſufficient for managing a Farm of arable Land of fifty Pounds a Year, or more. Thirdly, There is no Occaſion to buy Dung or Manure; an Article that many find the moſt chargeable of all others. I know a Chelturne-farmer, who rents about ſeventy Pounds a Year; and who, beſides keeping a Flock of one hundred and twenty Wether-ſheep for folding and dunging his Land, has, at thirty Miles Diſtance from *London*, laid out and expended, for only Coal-ſoot, in one Year's time, thirty-five Pounds. Fourthly, Here is the Wear of Harneſs, Carts, and Iron, very much ſaved, that would be otherwiſe employ'd in drawing Dung and Manure; as alſo Mens Time and Labour in doing it. Fifthly, By this, one and the ſame Field is kept under Corn and Fallow all the Summer. Sixthly, The Grain that grows in the Drilling-poſture has more Air, and conſequently not ſo ſoon hurt by Honey-dews, and other blighting Cauſes, as common ſow'd Wheat is, is eaſier and ſooner reap'd and dried, and not half the Seed required to ſow an Acre of Land, as when it is ſown in the

uſual

uſual promiſcuous way. It's true, there is a Charge of Hand-hoeing the Intervals, with the *Dutch* Hoe, once or twice in a Summer; but this Charge may well be ſet againſt common Weeding with Hooks or Hands.

CHAP. XVIII.

HOW much the Berkley *Dairy-maid is eſteemed for her Skill in making* Glouceſter *Cheeſe.*——The County of *Glouceſter* is well known to be moſt famous for making the beſt of thin Cheeſe; and, as ſuch, is ſo greatly eſteemed at *London*, and other Places, that it bears a far better Price than thin Cheeſe made in *Warwickſhire* and *Leiceſterſhire*; which valuable Property is undoubtedly more owing to the Skill and good Management of the Dairy-maid, than to the Graſs or Herbage the Cows feed on; as is apparent from that thin Cheeſe made in other Parts, where I have been, in Imitation of the fine *Glouceſterſhire* Cheeſe, where, before they had a Knowlege of this better Way, they made as bad thin Cheeſe as any; but now, near as good as the *Glouceſterſhire* Cheeſe: And it is on this Account, that I employ my Pen in Praiſe of the *Berkley* Dairy maid, who, for her peculiar Skill in making and ordering the fine, mild, fat, thin *Glouceſterſhire* Cheeſe, is ſeldom ſuffered to be hired out of the Part ſhe was brought up in; for if ſhe quits one Place, ſhe is almoſt ſure to be hired into another; becauſe their Farmers are ſo jealous of their Skill being made known in other Parts, that they take care, in time, to hire and keep them to themſelves. But, notwithſtanding all their Vigilance ſo to do, their Art has been ſpread many Miles from *Berkley*, even as far as *Wiltſhire*; where, in ſome Parts of it, they make abundance of thin Cheeſe, that is

ſent

ſent to *London*, and there ſold for the true *Glouceſterſhire* Sort. It is true, indeed, that a good Dairy-maid is a moſt valuable Servant: And, if every Dairy-country was as careful as *Berkley*, to keep them to themſelves, few others would be the better for them. But this is not the Caſe any-where elſe, as I know of; for in all other Counties, beſides *Glouceſterſhire*, Dairy-maids have the Liberty to try their Fortune elſewhere: And it is well they have, becauſe many Girls get better Services abroad, than their own Country affords; for, I am ſure, there are few, if any, reach the Wages of ſeven Pounds a Year, as one has that came out of *Warwickſhire*, and whom I helped into a worthy Gentleman's Service; where ſhe enjoys ſeven Pounds a Year, for making Butter and Cheeſe for the Family, and looking after the Poultry.

The Advantage of making uſe of new-invented Dairy-utenſils ——— The Choice of theſe are of great Conſequence to all Perſons concerned in the Dairy-buſineſs, eſpecially thoſe who are engaged in large Degrees of this Undertaking; becauſe, where many Cows are kept for a Dairy, the Advantages will be ſo much the greater; as I ſhall attempt to make appear by the following Account; *viz.* firſt, Of the ſmall leaden ſquare Utenſil: This is made firſt with a Frame of Deal-board, and then cover'd over with thin mill'd Lead, in a ſhallow and moſt ſmooth neat ſquare Shape, containing more or leſs Milk; for which Purpoſe, there are two Sorts, or Sizes, of theſe Leads made, the leaſt of two Feet ſquare, for moving to-and-fro at Conveniency: The other is two Feet wide, or more, and five Feet long, made for conſtant ſtanding in one Place, and not moveable. The leaſt is made with or without a Cork-hole; but the great one is always made with a Cork-hole in it, and a ſmall Deſcent about it for the better drawing off the under blue thin Milk,

and

and leaving the Cream behind; for theſe convenient Leads give the Dairy-maid an Opportunity either to ſkim off the Cream in the uſual Way with a Skimming-diſh; or otherwiſe, to let out the under blue Milk at a Cork-hole, and leave the Cream behind. But, in either Caſe, this Caution is to be duly obſerved; That whenever the Cream is taken from out any of theſe leaden Frames, that Cream which ſticks to the Sides of the Lead, is not to be meddled with, but left behind when the reſt is taken away; becauſe the Lead is apt to give that Part of the Cream a blackiſh Colour, if not an ill Taſte: And if ſuch is mixed with the reſt of the ſweet Cream, it may damage the Butter; which would be a needleſs Caution where Cream is taken from out of wooden Covers, or earthen glazed Pans; for here the Side-cream is as ſweet as the reſt. And, for keeping theſe Leads ſweet and clean, they muſt not be ſcour'd as Tubs, or wooden round Covers are; theſe are to be only ſcoured every ſecond time of uſing, and then done with Salt and Water; for if theſe Leads were to be ſcoured with Aſhes or Sand, as Tubs are, it would fret and roughen the ſmooth Lead, and be apt to cauſe it to retain the Taſte of the Aſhes or Sand. Therefore, they only ſcald the Leads one time, and every ſecond time they rub them with Salt and Water, and a Wiſp of Hay, or other ſoft Thing. But, for Tubs, they make uſe of a hard Hand-bruſh, with which they ſcour them with Wood or Bean-ſtraw Aſhes, or Sand: Of theſe the Bean-aſhes excel, as making a very ſtrong Lye. This for inſide Work; and for making the Outſide of theſe Tubs, Churns, and Milking-pails look fine and white, they ſcour them with either a white Clay, or with Powder of Chalk: And when theſe ſquare Leads are thus kept ſweet and clean, they are moſt excellent Utenſils to place in Cellars, in Summer

and Winter; for here, by their ſmooth Outſide, and cold Nature, they will cool Milk ſooner than Tubs will, and caſt up the ſweeteſt and moſt Cream, in leſs time than they can, with the leaſt Waſte, and with the leaſt Trouble, and Charge of Clearing. For theſe profitable Qualities, and for the Durability of theſe leaden Dairy-utenſils, moſt of the Dairy-farmers, living in *Alesbury* large Vale, have been tempted to furniſh their Dairies with them, as believing they can't be completely ſet up without them; becauſe Butter made with Cream taken from theſe Leads, is generally harder than that Butter made from Tub-cream, which is one of the chief Perfections belonging to the making of good Butter. And, for this Purpoſe, the following further ſerviceable Ways are practiſed by ſome of the nicer and better Sort of Dairy women; *viz.*

How to make up Butter in the cooleſt and ſweeteſt manner.——This is, of conſequence, to be obſerved; becauſe, if Butter is made up with a hot Hand, it may cauſe a Rankneſs in its Taſte. But, to prevent this, moſt Dairy-maids obſerve to dip the Trenchers they make it up with, often in cold Water. In ſome Parts of the Country, to prevent all Damage that may attend the making up of Butter with too hot a Hand, they make uſe of a thick wooden Cup, made out of Beech, that holds juſt one Pound of Butter; in which the Maid puts her new-churn'd Butter, after firſt rubbing its Inſide with Salt, or Salt and Water,

F I N I S.

INDEX

For the Month of *JUNE.*

A

AUTHOR's *Anſwer to the* Virginia *Letter* Page 22

B

Boyle, *ingenious. How he encouraged Arts and Sciences* 20
Bees, *the* Hertfordſhire *way of hiving them* 113
Why a found Swarm proves unſucceſsful 116
How pernicious Tobacco-ſpittle, and other Naſtineſs, is to Bees 115
How to make a found or chance Swarm of Bees *prove ſucceſsful* 117
Dr. Warder's *way of hiving Bees* *ibid.*
Butter, *how to make it up in the cooleſt way* 136
Honey-dews, *their Service to* Bees 124

C

Cheeſe, *the Advantage of making it with new-invented Utenſils* 134

D

Dairy-maid *of* Berkley, *how much ſhe is eſteemed for her Skill in making Cheeſe* 133

INDEX.

E

Encouragement *given by the* Iriſh *Gentry for promoting Huſbandry* 15
——————— *given by the King of* France *to his Subjects for promoting Good-huſbandry* ibid.
Engines, *new-invented for Fiſhing* 66

F

Farmer, *indolent: How one broke merely by ill managing his Farm* 12
Farmers, *why they ſhould be more protected, by the Law, than any Tradeſman, againſt vile Perſons* 16

G

Grazing *Grounds, how cured that were over-run with Moſs and Ant-hills* 29
Ground, *boggy, the firſt Occaſion of it* 37

H

Hay, *its good and bad Properties* 74
Hendon *way of curing and making it* 75

I

Inſects. *Obſervations on ſeveral Sorts of them, as the Land and Water-toad, Land and Water-frog, Land and Water-ſnails, Water-bugs, Water-lice, Water-ſhrimps, Water-worms, Water-maggots and Grubs, Water-ſpiders, Water-lizzards, Leaches, Horſe-hair Inſects, and Water-ſcorpion* 68

INDEX.

L

Landlords, *how it concerns them to prevent their Farms being damaged by Weeds* 5

Letter, *curious, wrote to this Author from* America, *ſhewing the ſeveral advantageous ways a Gentleman takes to improve his Eſtate* 6

Lord, *how a certain one gave his Tenants great Encouragement to provoke them to practiſe improved Huſbandry* 14

Land, *how drained in* Hertfordſhire 33

Letter *from a Gentleman, ſhewing how Bogs may be improved* 38

Second Letter *upon the ſame Subject* 42

M

Meadow-grounds, *the Damage they are ſubject to* 27

——————— *how ſpoiled by Moſs* 28

Meadow-land, *how a Gentleman improved it* 31

——————— *how a Tenant improved it* 32

Meadow, *low, in* Buckinghamſhire, *how drain'd by a Gentleman* 34

——— *how improved by a Gentleman, by turning the Water of a River into another Courſe* 35

O

Obſervations *on improving Bog-lands* 45

P

Ploughs, *proper to improve marſhy or boggy Grounds* 46

Ponds *made at* Gaddeſden 59

Pond, *how a Gentleman had a large one made, that never held Water* 60

—— *made for the Uſe of a private Houſe* 61

Pond,

Pond, *made to ſwim Shoulder-ſlip'd Horſes* 62
—— *large, made by Accident* ibid.
Plough-drill, *its Service* 127
———— *how by its Uſe a Gentleman carries on his Farming Buſineſs, without a Stock of live Cattle* 129

R

Room *made to anſwer the Conveniency of a Cellar for keeping Liquors ſound* 53

S

Springs *of Water, to diſcover* 50
Sea-fiſhing 66

T

Tanks *and Cellars, to make them for holding Water* 54
Trouts *made to acquire a Redneſs in their Fleſh* 65
Turnep-ſeed, *ſeveral new ways to defend Crops of it againſt Field-fowls* 77
———— *how a Farmer dreſs'd a Piece of Ground for it, and had a bad Crop* 50
Of the Dew-plant Turnep 79
New-broken-up Ground improper for Turnep-ſeed 80
Why Harrows are ſometimes employ'd before Hoes for improving a Crop of Turneps ibid.
Erroneous way to endeavour getting a Crop of Turneps *without Hoeing* 81
How the Shein Inſtrument ſometimes ſupplies hoeing Turneps 83
Turnep ſeed *ſown in Drills, and Cole-ſeed between them* 85
Turnep *and Cole-ſeed ſown together for a Crop* 87

How

How one Part of a Field took with Turneps, *and the other miſs'd* ibid.
Profitable Nature of the White, Green, and Red Turnep 88
How a Gentleman's Bailiff ſowed a Field with Seed of the great Red Turnep, *and loſt his Crop by it* 89

V

Vaults, *Cellars, and Rooms, making them to hold Water in wet or dry Ground* 52

W

Worlidge's *Notes on Huſbandry* 1
Weeding *Wheat, their way of doing it near* Ampt-hill 3
Weeds, *Burr and Cliver, how to prevent their Damage* 5
Wells, *Methods taken, and Prices given, for ſinking them in* Hertfordſhire 55
Wheat, *its Preſervation* 90
How a Gentleman built ſeveral Granaries to keep Wheat *in* 92
Large Granaries built at Brunſwick, *deſcribed* 94
Several ſorts of Perſons that uſually buy and lay up Wheat *for Sale* ibid.
How a Yeoman laid up Wheat, *and vow'd he would not ſell it, till it roſe to ſo much a Buſhel; and what followed* 96
How ſeveral Perſons were deceived in keeping their Wheat *too long before they ſold it* 98
How a Perſon kept Wheat *ſound ſeveral Years to Profit* 99
How an old Farmer preſerved his Wheat *in Sacks* ibid.
A ſecond Caſe of the ſame 100
A third Caſe of the ſame ibid.

How

How several Landlords have encouraged their Tenants to keep their Wheat *against a rising Market* 102
Wheat *bought by Traunters for Sale* 103
How a Person died worth many thousand Pounds, got chiefly by buying and selling Wheat; *with an Account how he preserved it sound for seven Years together* 104
Directions to preserve Corn in Granaries, &c. *from being eaten by Wevils, Maggots, or Worms* 108

FINIS.